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Why We're Liberal, Why We're Conservative

A cognitive theory on the origins of ideological thinking

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Abstract of the dissertation

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I show that multiple dimensions of ideological thinking—fiscal, moral, and a third dimension characterized by tough- and tender-minded approaches to outgroups—are related to a broad psychological phenomenon characterized by individual differences in cognitive rigidity and flexibility. But this is *not* Authoritarianism research: I provide evidence that this phenomenon is grounded partly in individuals' unconscious, deep-psychological tendency to perceive the world in relatively strongly or weakly defined categories, which has "downstream" implications for people's deliberative thinking styles. Numerous conventional wisdoms are dislodged, most prominently that individual psychological differences are more important for "social" than for fiscal ideology. Instead, measuring ideology by issue positions, I find that the fiscal and "tough-tender" dimensions of ideological thinking (i.e., "secular" ideology) are (a) more closely related to each other than either is to moral ideology, and (b) more strongly determined by cognitive rigidity-versus-flexibility than is the moral dimension, while moral conservatives are drawn to leaders who, due to their strongly categorizing cognitive styles, are likely to be secular conservatives. These deep perceptual-cognitive differences between liberals and conservatives—especially between secular ideologues—help explain a parade of odd and unexpected, yet ostensibly apolitical behavioral asymmetries between individuals of the left and the right.

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Chapter 1

A perceptual and cognitive categorization theory to explain individual differences in ideological thinking

"Don't worry about studying personality differences between fiscal liberals and conservatives. We <u>know</u> fiscal conservatives are just as open-minded as liberals."

-Anonymous, heard in the halls of an American
political science department, 2006

What *makes* you liberal or conservative?

The oldest conventional wisdom says liberals and conservatives are no different from each other with regard to their cognitive or personality traits—they just disagree on the issues. A slightly more progressive conventional wisdom says *social* liberals and conservatives might have different sorts of personalities, but maintains the psychological indistinctness of fiscal liberals and conservatives.

The current conventional wisdom in political science also says that ideologies can contain any grouping of policy positions whatsoever: any issue position can go, at random, with any other issue position and yet be sold effectively as an ideology in the marketplace of ideas.

The conventional wisdom also says there are two dimensions to ideology— often called "social" and "fiscal," but maintains that they are orthogonal, almost entirely unrelated, and certainly not psychologically related.

The conventional wisdom also holds that, if there are personality differences between ideological types, social conservatives (often cast as "Authoritarians") are closed-minded, rigid thinkers, while all other types, liberal and conservative, are less closed-minded, more flexible.

The conventional approach to ideology occasionally finds individual differences between liberals and conservatives interesting to describe, but has shown relatively little interest in explaining *what causes people* to think in left or right ways—probably because many assume causes to be unexplainable.

How on earth did we get here?

What makes people think the way they do about politics is perhaps the most fundamental, most important question in all of political science. And mostly, political science hasn't been doing a good job of answering it. Many in our discipline aren't even interested in trying. However, there is a small but growing group of political scientists and psychologists (and brain-imaging researchers) who understand that ideological differences are not uncaused and have begun to make a real effort at understanding the root *causes* of ideological thinking—what *makes* you liberal or

conservative. The question has not been completely answered—not even close—and certainly won't be here. But with this dissertation, I add my effort to theirs.

Barker and Tinnick (2006) write,

> Even if mass publics frequently follow the lead of party elites, it would still not explain why those party leaders came to organize their attitudes in ways that we call predictably "liberal" and "conservative." Is it purely a historical function of coalition building and interest-group pandering that evolves over time, or is there *some natural ideological affinity* among the seemingly disparate political attitudes? (My emphasis)

This research project was begun with the conviction that indeed there is a natural affinity—that *political ideology is largely a psychological phenomenon.* By this terminology I mean that ideology is something other than simply a constellation of policy positions that "hang together" in one way for conservatives, in another for liberals, and still another for Marxists, feminists, socialists, and so on. In other words, while it is certainly sensible in some conversational contexts to discuss liberalism or conservatism as a collection of positions, I will show that there's a clear sense in which ideological thinking is *not* synonymous with manifesto endorsement, although a particular ideological *style of thinking* certainly might lead to the endorsement of a particular manifesto.

Moreover, I certainly don't deny that realistic interests, such as class-based interests or involvement in narrow interest groups (farmers, iron workers, ethnic groups) can lead a person to endorse policy positions that their psychological tendencies might not have predicted. I also don't deny that ideology is partly a social-transmission phenomenon: sure, children can learn political beliefs from their parents. But neither of these points is at issue here. This project is about the cognitive, and to a lesser extent the personality, psychology of ideological thinking.

Talking to ordinary people, it seems my hypotheses are largely uncontroversial, if still fascinating. People just sort of know that "liberals are soft" and "conservatives are hard," "liberals are artists" and "conservatives are frontiersmen," "liberals are fuzzy thinkers" and "conservatives are straight arrows." I have become fond of saying that the only people who don't realize liberals and conservatives are different sorts from one another are political scientists.

I hope that changes. There's evidence here that should substantially change how political psychologists view ideology. Not only is a perceptual-cognitive flexibility-and-rigidity dimension of human psychology largely responsible for differences in ideological thinking (and not only is Big-Five Openness to Experience, the variable *du jour* for capturing cognitive flexibility in ideology research, a relatively poor way to handle this dimension) but this broad dimension of psychology is *not* more closely linked to "social" ideology than to "fiscal" ideology—it's at least

as strongly linked to fiscal ideology, and probably *more so*. Moreover, viewing ideology as consisting of two dimensions—a moral one and a fiscal one—blinds us to the existence of a third dimension, what I have called "tough-tender" ideology in a nod to Eysenck's (1954) concepts of tough- and tender-mindedness. This dimension, which should probably be viewed not as a "last" dimension, an afterthought, but as the first and most important dimension of ideology, consists of issues such as how to handle crime, immigration, and militarism—issues conventionally viewed by many as "social" issues, but which turn out to be psychologically closer to fiscal ideology, and which seem to capture a group-based "us-versus-them" theme.

Furthermore, the psychological evidence is in much sweeter harmony with a view that moral ideology and secular ideology are psychologically related—implying that moral conservatives are, for deeply psychological reasons, unlikely in any democratic society to find themselves long-term political bedfellows with fiscal or tender-minded liberals (and vice-versa)—than with the opposing view that "any issue can be packaged with any other issue" in the making of an ideology, with an equal chance at success in the marketplace of ideas. This latter view is virtually an article of faith among many if not most political psychologists, but my results point to a rather natural alliance between moral conservatives and other kinds of conservatives.[1]

In particular, an emerging and nuanced theory of ideology seems to be emerging from the contours of my results: "cognitive rigidity," grounded partly in viewing the world in relatively strongly defined categories (having "high categorization strength") is a primary and direct cause of *secular* conservative thinking, and while it's probably also a psychological precursor to morally conservative thinking, it's less important for the latter dimension. By contrast, moral conservatives, relative to liberals, have an especially strong attraction to *leaders* who see the world in clearly defined categories. Hence, to the extent that their own thinking does not push them to take fiscally conservative positions, moral conservatives tend at least to choose leaders who do. This special role for leadership in the moral dimension of ideology is to my knowledge an innovation in ideology research, and as it emerged late in the course of this research project the evidence I present for it is only of a pilot-study nature. My own theories as to why such a phenomenon would characterize moral ideology are still immature, but will be discussed.

Still replying to Converse after all these years

Formally, ideological thinking as a psychological phenomenon means that behind any citizen's endorsement or rejection of certain policy positions lie psychological tendencies—such as cognitive style and other chronic mental states—

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[1] The likely exception to this is where there *is not much of a marketplace of ideas*—i.e., in a totalitarian society. See Kossowska and Mervielde (2003), which I discuss later. There is evidence that the more open-minded favor less "socialistic" economics in such societies.

which *predispose* the citizen to endorse certain positions over others, long before the citizen ever articulates an opinion about an issue or even considers whether he has one. According to this conception, a citizen can be, in a psychological sense, "pre-conservative" or "pre-liberal" without even being aware of what political issues exist. Even complete non-ideologues, in the sense meant by Philip Converse and colleagues (1960, 1964), can therefore be at very least "pre-ideological." This notion, of course, takes a highly dubious view of the Conversian concept of "nonattitudes," articulated in the landmark "The Nature of Belief Systems in Mass Publics" (Converse 1964). Nonattitudes are precisely what he found to characterize a huge swath of the polity. I'm saying that where a person's attitude is poorly formed and varies over time, this fact does not imply that, supposing she is given the opportunity to become politically active and form more crystallized attitudes, we could not successfully predict the end-state attitude from measurements of cognitive style.

Indeed, the findings reported here can be seen as part of a "reply-to-Converse" tradition, and fall squarely on the side of the debate arguing that nonrandom attitudes exist in ordinary people. Latent ideology lies in our psychology.

According to Jost, et al. (2009), "Most researchers assume that ideology is represented in memory as a kind of schema, i.e., a *learned* knowledge structure consisting of an interrelated network of beliefs, opinions, and values" (my emphasis). Converse certainly assumed as much. He states flatly in "Belief Systems" that "it seems clear that, however logically coherent a belief system may seem to the holder, the sources of constraint are…less psychological than social." The reply here is that, while social learning no doubt occurs, Converse dismisses the psychological much too quickly.

If there is learning, there is teaching. And again, Converse promotes the idea that belief systems are "packaged" by elites, so that the extent to which an ordinary person is ideological is the extent to which he has digested and understands the package he has purchased. But he himself is not capable of rebuilding the package on his own. The reply is that a marketplace of ideas no doubt exists and interacts with psychology, but where there are psychological dispositions to adopt policies of a certain flavor, idea consumers are not merely passive purchasers of what others have packaged. The packaging must match the psychology, or it will not sell.

Furthermore, Converse is clear that liberalism and conservatism represent an "elegant high-order abstraction." But if there is something fundamental about leftness and rightness that can be found in human psychology, then however abstract the concept of a left-right continuum may appear, it is instantiated in something not abstract at all: human neurophysiology. In the early sixties, of course, Philip Converse was operating without the first notion of a future of findings of genetic and physiological bases for ideological thinking, findings which promise to change radically what is meant by ideological thinking. In Converse's open-ended questions, a person's being ideological almost necessarily means that they articulate *by name* an actual principle by which their positions hang together, such as liberalism or conservatism itself. Converse and his colleagues certainly did not endeavor to

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measure a latent organizing force—such as personality or cognitive style—that might take the place of explicit doctrine.

Converse recognizes this argument, however, and this is why he makes use of the notion of issue constraint as the paramount measure of the presence of ideology. Of course, even among non-elites, he finds *some* issue constraint. And later, I will find some evidence that psychology may have stronger effects for the opinions of the more politically sophisticated more than for the unsophisticated. But if abstract and purely apolitical psychological variables affect political ideology, it's hard to avoid the conclusion that even people whose political opinions appear on surveys to be pure noise are in some way pre-ideological.

In fact, we should take up for a moment perhaps Converse's most famous "finding"—that people's policy positions at time t_3 can be predicted as well from their positions at t_1 as from t_2. I've recreated Converse's depiction of this result in Figure 1.1.

Figure 1.1. Converse's famous Figure 4, "Pattern of Turnover Correlations between Different Time Points."
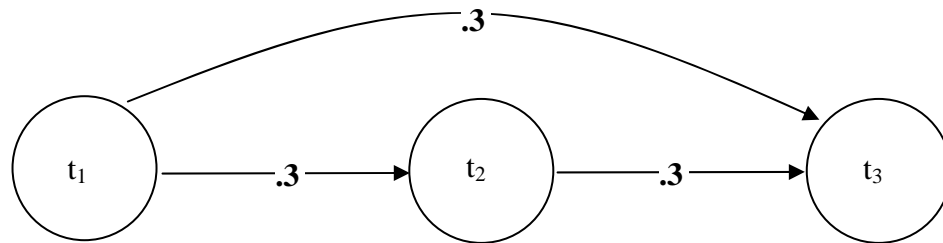
The numbers along the paths in the figure are correlation coefficients; the circles represent policy positions at different time points. According to Converse, "no meaningful process of change shared by all respondents…would generate this configuration of data." He concludes, then, that only one data-generating process can produce this picture, and there's no attitude change at all: a few people don't change their opinions at all, while the rest generate opinion entirely randomly—have "nonattitudes."

However, there is another process he overlooks which can account for this pattern of data: *everyone* is generating (and regenerating at each time point) political positions with some stochastic element (i.e., with noise) but that stable *psychological* elements push people generally in one direction or the other each time they're asked to state an opinion. According to this psychological model, while for some people opinions might indeed be completely stable, and for others there may indeed be completely random opinion-outputting processes, for many people this psychologically induced partial stability is exactly what I propose happens. This is also, of course, not a model of attitude "change." It is a model of opinion generation and re-generation at different time points.

Converse overlooks this possibility because he does not take seriously the idea that ideology can be a largely psychological phenomenon. For the most part, Converse is captive to his assumption that ideology *must* be a social phenomenon. If people haven't had the opportunity to learn an ideology, then they simply cannot possibly be thinking about politics in a systematic way at all.

Did Converse's landmark work destroy the study of ideology, the pieces of which scholars have been picking up ever since? John Jost seems to think so. While it's absurd to suggest that an author who generated an entire literature of replies did anything other than stimulate the study of his subject, Converse certainly influenced its direction. Possibly overstating the case, Jost writes (2006), "many end-of-ideologists interpreted empirical evidence of the flawed and fragmented nature of people's political attitudes as indicating that ideology does not exist." At any rate, Converse's argument about nonattitudes probably did bring about a dramatic reduction in a distinctly *psychological*-ideological research industry that had been booming since Adorno, et al.'s *The Authoritarian Personality* (1950).

I am not the only researcher to look askance at the "nonattitudes" conclusion of Converse. According to Jost (2006), Lane (1962) recognized even as ideology was being "defined away," that people might at least possess "latent" ideologies. Kerlinger (1967) concurred that ordinary people do have attitudes. Others have argued that the American polity was *becoming* ideological almost as the ink was drying on Converse's landmark work. For example, Abramowitz and Saunders (1998) show that political parties and voter ideologies are more in harmony now than prior to the 1990s. And Levine, et al. (1997) find that during the 1970s and 1980s ideology played an increasing role in shaping partisanship, cutting across New-Deal-Created social group cleavages that had existed previously.

It's not clear, however, that issue-attitude constraint is a newly rising phenomenon of the last quarter century. If it were, Converse might well have been exactly right, even if 1960 was one of the last years in which the nonattitudes view held sway. But Achen (1975) argues on statistical-theory grounds that Converse dramatically underestimated the constraint among issues in the population even then. Sullivan, et al. (1978) argue that issue constraint neither increased in the wake of Converse's work nor was absent in the population when Converse attempted to measure it, rather changes to survey items resulted in the appearance of a rising level of constraint. And factor analysis shows the modern dimensions of economic and moral ideology discernible in surveys of nonelites that predate Converse's by two decades (Ferguson 1939).

Nonetheless, I am clearly part of a new wave (and, honestly, a little late to claim to ride its leading edge) of researchers seeking to overturn this conclusion based on psychology. I contend, with Lane, that a "latent" ideology is a coherent concept, a phenomenon likely to exist. People are not random opinion generators.

This notion that citizens are pre-ideologically liberal or conservative is a not-outlandish supposition, and maybe even a compelling conclusion, in consideration of three sets of findings. The first set of findings is biological in nature. In 2005, Alford,

et al. published their groundbreaking finding that ideological positions are partially genetically inherited. Prior to that, Martin, et al. (1986) found evidence supporting a genetic model for "family resemblance in social attitudes" and additionally found evidence for assortative mating based on social attitudes. Cultural transmission of social attitudes fares poorly. And see Bouchard and McGue (2003) for a review of studies finding heritability in social attitudes.

Additionally, there is emerging evidence that differences in liberal and conservative behavior can be observed at preconscious behavioral, and even neuronal, levels (Hatemi, et al., 2007; Oxley, et al., working paper, 2008; Amodio et al., 2007). The implication of this work is nearly inescapable: as it seems near-lunacy to suggest that individual policy positions can be written into the genetic code, if in fact biological relatedness correlates with policy positions, what's mediating between genes and opinion surely must be some more general psychological tendency (thereby implying neurophysiology).

The second set of findings that strongly imply pre-ideological states is summarized most recently in Jost et al. (2003), but also in McCrae (1996), and include findings by Caprara and Zimbardo (1999; 2004), Van Hiel et al. (2000) and other, largely European, researchers. These mainly involve the correlation of various measures of ideology, or of belonging to particular ideological groups or coalitions, with respondents' scores on personality trait inventories, such as the Five-Factor Model (FFM) or the "Big Five." Many of these studies report an especially pronounced negative relationship between the trait known as Openness to Experience and conservative beliefs. McCrae (1996) has gone so far as to suggest that Openness alone among the Big Five may reign supreme in driving people into ideological camps: "A case can be made for saying that variations in experiential Openness are the major psychological determinant of political polarities." For most of these studies, the "NEO Personality Inventory" (McCrae and Costa 1997) or some derivative questionnaire defines Openness, as with Caprara and Zimbardo. But Van Hiel and Mervielde (2004) use an alternate measure of Openness—"Boundaries in the Mind"—to predict ideology. "Boundaries" is, frankly, a weird questionnaire that taps into whether people see "fuzzy" or well-defined boundaries with regard to such disparate concepts as sleep and waking, gender roles, vividness of childhood memories, and even preference for paintings with low or high complexity. Yet however strange, the authors find numerous facets of boundaries—opinions about organizations and relationships; opinions about beauty and truth; aesthetic preferences for edges, lines and clothing; opinions about groups; and several others— significantly correlate with political conservatism, Right-wing Authoritarianism (Altemeyer 1988) and left/right self-placement.

It seems, in fact, that the traits-ideology link is a hot topic these days. Mondak (2008) found Big-Five personality traits to be related to a wide variety of political behaviors and attitudes. And whereas most of the European research cited above, and by the Jost team, treats left-right ideology as a single dimension, Gerber, et al. (2009) recently used not only self-identification but issue-position questions to separate fiscal from social ideology and show that fiscal and social ideology are each related to

personality traits when analyzed separately—a contradiction of the prevalent view in political psychology that fiscal conservatives and liberals are not substantively different with regard to their psychology. My data will confirm emphatically that Gerber et al. are correct and the prevailing view is entirely wrong. Gerber et al. also conclude that traits do not affect issue attitudes in the same way they affect ideological self-identification, which is an extremely important point. Most studies of ideology in the past seem to assume self-identification is an acceptable measurement of "ideology." But if ideology is about political thinking, it's clear on its face this isn't true. Empirically, we will see that point, too, supported.

The third set of findings which point the way toward a distinctly psychological foundation of ideology are in the form of data gathered for this very project. In the first stage of this project, I cast a wide net in search of *asymmetries* in the behaviors and attitudes of liberals and conservatives which do not appear to have any relevance to political issue positions. This probe for numerous nonideological asymmetries seeks to find evidence for individual differences in perceptions of leadership, social group importance, conceptual representations of social arrangements, persuadability, patterns of motivated reasoning and selective exposure, and so forth. Of course, the various tests for asymmetry were guided by my theoretical framework and its hypothesis that individual differences in cognitive-perceptual categorization strength, or at least in general cognitive flexibility-rigidity, are largely responsible for differences in opinion formation, and so the asymmetries are designed to reveal the contours of just such a psychological difference.

Categorization is central to this work, but I don't want to underemphasize the importance of the asymmetries themselves. Although I have characterized these idiosyncratic asymmetries as merely "pointing the way" toward the deeper psychological variables (categorization strength foremost) which are ostensibly of greater theoretical interest, the broad phenomenon of which these asymmetries paint such a colorful picture is, at a Gestalt level, perhaps better understood *through the asymmetries themselves* than through "traits" that make abstract claims about subsuming the entire human personality, or through trait-related "motivations" measured by multi-item scales, or even through deeper psychological variables which I will introduce. There is just so much understanding to be gained from a consideration of the asymmetries.

In fact, having completed all the data analysis and taken a step back, I believe the most comprehensive understanding of ideological opinion formation currently available comes through treating *all* the variables I use in this study as asymmetries, stepping back, and asking ourselves what we see: *Who are these liberals? Who are these conservatives? And how are they operating differently?* The end result is a deeper understanding of what the non-political scientist already knows in his bones, with empirical validation to boot. So this is a book largely about the behavioral and other apolitical asymmetries between liberals and conservatives.

But it's also a study about what *causes* liberalism and conservatism, and one immediately notices a shortcoming of such studies as Alford et al.'s, Jost et al.'s (and its dozens of referents), McCrae's and others, all of which merely correlate

ideological self-placement or opinion with various traits, behavioral tendencies, or with a twin's ideology: there is no empirical evidence of what *process* links a trait (or a gene) to an opinion, and this is where the interesting action ought to be. At very least, Jost et al. attempt to use these correlational analyses to paint a kind of speculative picture of how ideological thinking grows out of traits, making the argument that conservatism is a motivated belief-adoption strategy which helps people manage unwanted uncertainty, fear, and threat. But the majority of the empirical evidence I've seen is limited to associating one variable with another—a trait or an intrapsychic "motivation" with an ideological self-placement, a party membership, or the final expression of an opinion.

Largely for this reason, I do *not* regard the currently hot traits-based research as revealing a tremendous amount about the deep cognitive foundations of opinion formation, however useful it may be in providing guideposts toward those cognitive foundations. As an illustration, it's worth asking whether variables like Openness are prior to liberalism in the first place. Huddy and Young (2007) have found that psychological openness seems to be a large part of many people's concept of what it means to be a liberal. Before we assume that Openness "causes" liberalism, it should be considered whether a citizen might first think of herself as liberal and then, knowing that liberals are considered "open," describe herself on a personality inventory as open, even in cases where this is a horribly inaccurate self-description. Because of these problems, political psychology discipline must eventually look past self-reports of dispositions or intra-psychic states and their correlations with ideology measures, and toward deeper psychology and measurable cognitive differences, or even neurophysiological differences, and begin to *observe in process* differences in cognitive process as they systematically produce differences in opinion.

But observation of processes *in process,* it turns out, is a tall order. Despite my convictions, I have not been able to sweep aside entirely this "bivariate correlational" character of psychology-ideology research—it plagues my studies too, and is apparently a bugbear to this kind of work. Nonetheless, I have tried to fill in some of the gaps in the causal chain, and the result of my efforts is that a more plausible and detailed story of opinion formation than has yet been told unfolds.

Before diving into my own Categorization Theory, there are a couple of other attempts to theorize about causes of left-and-right-style thinking which are worth mentioning, as both contain hints of agreement with my own perspective.

In an interesting theoretical stab at establishing causes for ideology, Lakoff (2002) argues that a more value-based, "culture-war" politics has allowed people to graft their attitudes about parental roles (father as punisher, mother as nurturer) onto their beliefs about appropriate roles for government. By Lakoff's accounting, adherence to the tough-mindedness of the "strict father" is a cause for modern conservatism. Lakoff's thrust, though grounded in culture-war politics, claims to subsume the entire liberalism-conservatism phenomenon, including fiscal issue positions and explaining all the dimensions in a psychological-social framework. And while Lakoff's ideological research is not rigorously empirical, Barker and Tinnick

(2006) found empirical support for his ideas, connecting beliefs about parental roles to attitudes about a wide range of political issues even in the presence of numerous counter-hypothetical controls.

Though my work is more empirical than Lakoff's and makes a more rigorous attempt to specify and measure psychological processes, the results here are not at all antithetical to Lakoff's ideas. In fact, the internal logic I describe that may underlie tough-minded and fiscal conservatism, a "mechanical" linking of (high or low) effort with (high or no) reward, sounds a good deal like Lakoff's "disciplinarian" or paternalistic model of child-rearing, and the "leaky" or fuzzy accounting of unseen communitarian concerns in an individual's development of a political view can be recast as Lakoff's nurturant parent model without too much difficulty. For those who prefer metaphor to actual specification of process (and I do not deny the value of metaphor in understanding process), Lakoff is quite helpful. It seems the process I'm measuring and testing for is not too different from Lakoff's model of ideological thinking.

Under my own paradigm, then, one might regard Lakoff's findings as yet another instance of nonideological asymmetry between ideological liberals and conservatives, along the lines of the numerous other behavioral asymmetries I report in chapters 5 and 6. In other words, whether one's orientation is toward a strict or nurturant parent may be less a cause of political attitudes than another set of attitudes whose political nature is not immediately apparent (at least not to political scientists). This view of Lakoff's ideas is especially sensible in light of the fact that, to my knowledge, Lakoff has not articulated what might cause a person to adopt a particular view of parenting—especially what kind of psychological variables might be involved—other than the notion that many people endorse the kind of parenting they experienced as children themselves.

Duckitt (2002) supports a model of political thinking (in this case the focus is intergroup prejudice) driven by dual psychological forces. In this case the two forces are tough-mindedness and social conformity, and they are treated as personality dimensions. Notwithstanding my lack of enthusiasm for the explanatory power of self-descriptive trait approaches to measuring individual differences, Duckitt's model is reminiscent of a separate result obtained in my work. One need only suppose that trait tough-mindedness is related to strong categorization, whereas social conformity is a part of a moral-religious psychological or social-psychological phenomenon. In Duckitt's model, tough-mindedness predicts Social Dominance Orientation (Pratto et al. 1994), a preference for intergroup hierarchy which I do not address in this dissertation, but which is known to predict economic ideology, while social conformity predicts Right-Wing Authoritarianism (Altemeyer 1998), which is known to predict moral ideology. In Duckitt's model, both psychologies cause prejudice (the same ideological outcome, that is) via multiple pathways. In my model, of course, the dependent variable is not prejudice but simply general opinion formation.

At any rate, Duckitt's model, supported by his data, hints at a surprising result of mine: cognitive flexibility-rigidity (if tough-mindedness has a relationship to it) is probably a better predictor fiscal than moral ideology. Further, it's curious that in

Duckitt's model, social conformity is *negatively* and significantly related to tough-mindedness, while SDO and RWA are positively related. Peering deep into Duckitt's data, it's possible to see the contours of a model that begs to be tested: do submissive Authoritarians learn to endorse dominant and decisive thinking even though it's initially unnatural for them?

A Categorization Theory of ideological thinking

I will offer in the following pages empirical support for what I call *The Categorization Theory of ideological thinking*, or "C-theory." I will argue that ideological opinion formation is related a pre-ideological tendency to perceptually and cognitively categorize or compartmentalize the world at relatively stronger or weaker levels. Although empirical support for causality is limited as of this writing, the theory itself holds that strong categorization is a *cause* of conservatism, and weak categorization a *cause* of liberalism. Furthermore, the theory asserts that this cognitive compartmentalization process is automatic, and need not be conscious or involve any deliberative or effortful processing. The way brains construct compartments leads to types of ideological thinking entirely without subjects' awareness.

All people understand the world by creating categories that streamline the perceptual process: for example, confronted with a chair we have never seen, we do not deal with it as though it is an entirely new object, deciding whether to sit on it by reasoning that its horizontal planar surface will counteract known laws of gravity and so forth. It fits the category "chair," and we deal with it via its category, with which we have experience. I argue here, however, that not all people create categories in exactly the same way: some people habitually (and preconsciously) perceive the world through "stronger" categories than others do.

By strong and weak categorization, I mean that some people create categories with more "impermeable walls" or more "clear-cut boundaries" than do others. Viewed in terms of Barsalou's (1987) concept of "graded structure" in the construction of categories, as category members become less central and more peripheral to a category, for some people the drop-off to definitively *not belonging* occurs more steeply, so that for these individuals category membership of most objects is determined decisively and effortlessly. For others, the drop-off is more gentle, leaving more objects near the periphery of the category and indeterminate as to their membership or non-membership. Categories are seen as having relatively "impermeable" walls and clear-cut boundaries, or as having "permeable" walls and "fuzzy" boundaries, although even these surely contain some "central" members and exclude some very unrelated ones. To illustrate, a strong-categorizing mind might deal with the categories "hard tasks" and "easy tasks" by conceptualizing every task it considers as either hard or easy—or might even create a third category, "medium-difficulty tasks" and assign each "task object" clearly to one of the three categories. Meanwhile, a weak-categorizing mind might well regard some tasks as essentially hard and others as essentially easy, but most tasks would be regarded as existing—

and possibly even shifting from to time to time—on a *continuum* of relative hardness and easiness.[2]

We can diagram compartmentalization strength intuitively. All human minds are conceptualized in C-theory as representing information via associative networks,[3] and it's in that context that we can suggest what C-strength would "look like." Associative networks represent objects and concepts as nodes connected to one another by "spreading activation networks." To imagine a network with strong compartmentalization, imagine a neural or conceptual architecture that resembles a group of walled cities linked by a small number of two-lane highways; to picture a network with weak compartmentalization, imagine a number of loose "communities" that abut each other and, though they may have different names, are so interconnected that they "spill over" into each other such that there are large areas in which it's difficult to determine in which town one is standing.

We can illustrate the concept even better. According to Eysenck and Keane (2000), categories do not have clear boundaries for people. McCloskey and Glucksberg (1978), for example, found that their subjects were sure that "chair" was a member of the category furniture, but disagreed on whether "book-ends" was, and differed within-subject from session to session on the same question. In similar fashion, figure 1 shows one highly stylized model of how two differently categorizing minds might represent the categories of "domesticated animals" and "wild animals." On the left of the figure, for each "type of mind," are arranged six typical examples of domesticated animals: cow, chicken, dog, pig, goat, horse. On the right are six similarly typical examples of animals most (Americans, at least) would consider wild: cheetah, bear, hyena, porcupine, deer, fox.

For this example, let us assume that associative networks do not operate without any pre-activated context (and in reality, they probably don't). Rather, cow and chicken are strongly connected for most people, but this connection is moderated by the activation of the notion of "domesticity and wildness." That is, when the

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[2] I hasten to note that nowhere do I intend to suggest that some people categorize while others do not. I aver that *all people categorize*, but hypothesize that they do so at relatively stronger and weaker levels, and chronically.

[3] See, e.g., Bargh and Chartrand (2000); Neely (1977). However, possibly the best discussion of associative network systems and spreading activation that I've seen is found in Eysenck and Keane (2000). My concept of categorization is very similar to the McClelland network described in this piece as an "interactive activation net." According to Eysenck and Keane, McClelland (1981) "provides a neat demonstration of how such (computer) networks can manifest many of the properties of human conceptual systems." The network can "generalize" about a category by virtue of continuing activation of certain nodes in the network and, after "clamping" or continually activating a node, when the network "settles," observing residual activation of various linked concepts. Also, the network allows for negative activation, or inhibition-connections. One might ultimately think of strong compartmentalization as not only a sparser or more disconnected set of positive-activation systems, but as the presence of more negative pathways.

concept "cow" is activated by some stimulus—say, a cow—chicken is not invariably activated to the same degree as a result, but is maximally activated when the concept of domesticity or wildness has already been primed. We assume in this example, then, that for the subjects whose minds are modeled in figure 1.2, domesticity and wildness are pre-activated concepts.

We might imagine that for most people of any cognitive style, in this context the six domestic animals are strongly associated with one another, while the same is true of the six wild animals. This is represented by thick line segments connecting the different animal-objects together inside each of the two categories. But now, the subjects' attention is directed to three additional animals whose domesticity is more reasonably questionable: goose, buffalo, and bee. These are the "bookends" of the animal world: all three animals are "farmed." Buffaloes and bees produce products humans consume, and many humans keep geese as pets. And yet all three animals are (or, in the case of buffaloes, until recently were) encountered frequently in the wild, while the examples of domesticated animals given here are almost never encountered outside of a home or farm setting, nor are the wild animals mentioned here normally encountered in captivity except in zoos, where they are clearly represented as examples of wildlife.

Now, it is expected that any human mind, whether strongly or weakly categorizing, would upon effortful reflection agree with the logic presented here in support of an objective positioning of buffaloes, bees and geese as somewhere between the other 12 animals shown, as they are undeniably sometimes-domesticated, sometimes-not. However, in the context of domesticity, a strong-categorizing mind might automatically and unconsciously assign a strong connection between these "middle" animals and those of one category or the other, while a weak-categorizing mind might draw tentative, weaker lines to both categories. Exactly this model is illustrated in the figure (although, to introduce a bit of realism, in figure 1 the stronger-categorizing mind does not completely sever inter-category connections). Again, this categorizing tendency would not lead a strong categorizer who categorized bees as wild to deny explicitly the unavoidable fact that bees are sometimes domesticated. However, when thinking of bees, part of his schematic concept of bees would be that they are wild, and he would reason about bees in the same way that he reasons about other wild animals, while a weak categorizer would reason about bees in a different way, making less use of their categorical wildness or domesticity. Of course these examples are highly stylized, oversimplified, and are meant to give the reader an easily swallowed flavor of what categorization might look like in a simplified associative network setting.

Differential categorization strength need not refer only to physical objects and whether a category name is part of their definition. In psychological research it's not uncommon to see objects, behaviors, evaluations, and motives all represented in the same associative network (e.g., Burdein, et al. 2007), with each type of node connected to each other type of node. We can think of a category not only as a

Figure 1.2. Differential categorization in an associative network.

Stronger-categorizing mind
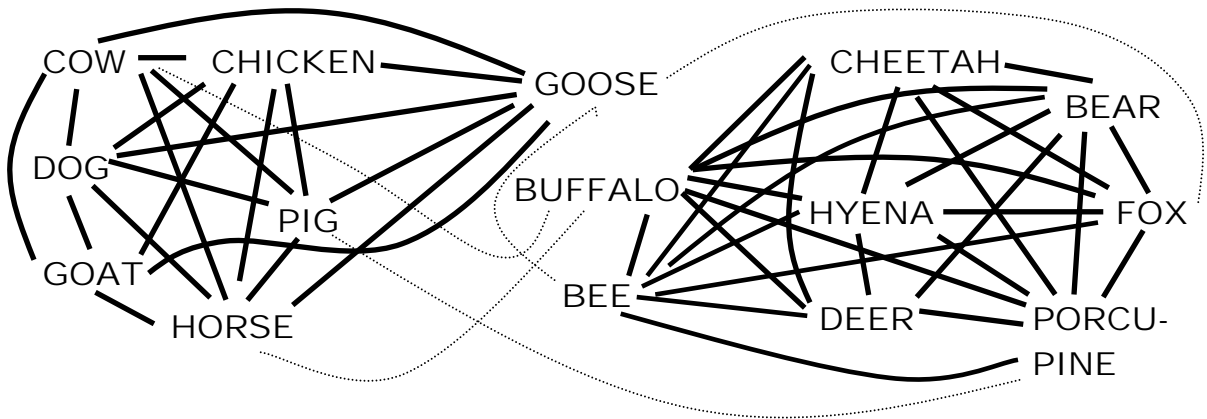
Weaker-categorizing mind
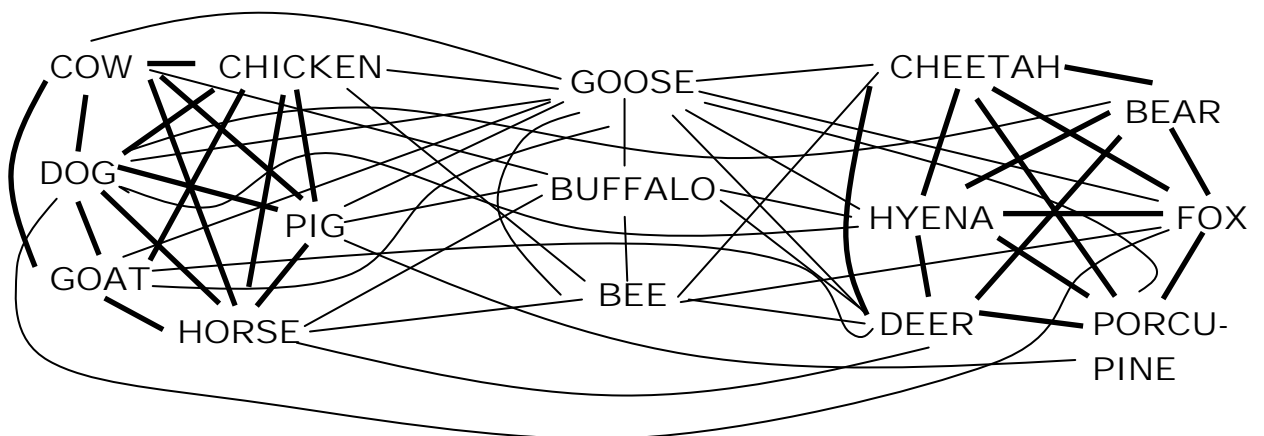
general concept of which there are exemplars (i.e., bird: robin, eagle, penguin), but more expansively as a conceptual network defined by its various nodes, which need not be limited to object exemplars.

These more inclusive "compartments," then, could have wide-ranging ramifications for ideological thinking. I turn to Basilli's (1995) finding that the accessibility of voting intentions is related to conflict among the various determinants of vote choice (partisanship, candidate liking, etc.): less conflict between determinants of vote choice leads to greater vote intention accessibility. His predictions are based on an associative network model of attitudes, considerations *and* behavioral intentions very similar to the one discussed here and borrowed from Fazio (Fazio 1986; Fazio et al. 1986; Fazio and Olson 2003). In this expansive associative network model, attitudes, considerations, and behavioral concepts are interconnected.

Strength of categorization is easily seen as the degree of "internal tightness" within the various conceptual or schematic "sectors" of a network of associations. One sector, for example, might be the "vote-intention schema." As Basilli puts it, "accessible…[voting] intentions are associated with generally *more interrelated electoral attitudes* than are less accessible…intentions" (my emphasis). In terms of C-theory, strong categorizers ought to have greater accessibility to their voting intentions because their "vote-intention schema" is more isolated from countervailing considerations. It would, that is, have fewer associations to outside-the-schema, inconsistent considerations that might "make use" of those associational pathways to "invade" or "leak into" the vote intention from other, more distant information structures in the network. Subjectively, this might be experienced by a strong compartmentalizer as a simple failure to experience the thought, "…but what are we going to do about the homeless?" or "…but what if the United States isn't always the most powerful nation on earth?"—facilitating a simpler, easier choice to vote for a conservative candidate.

In fact, by this mechanism strong categorization should produce a distinctive style of cognitive *deliberation* about things—one in which logic-style operations characterized by antecedent-and-consequence evince a mechanical tightness or obvious directness, whereas weak categorizers should show a deliberative style that appears more organic, less characterized by precise, initially undeniable, logic and machinelike one-to-one relationships between antecedent and consequence.

The direct deliberational style of strong categorizers could, for example, produce the individualism and the tightly-woven reward-and-punishment concepts that characterize fiscal and tough-minded conservatism. Effort should bring equal reward, a mistake should bring commensurate punishment; and government intervention should not undo the logically, almost mathematically undeniable justice wrought by the natural connection between action and reaction, either by taxing away deserved winnings or by doling out undeserved assistance, by erecting pointless

barriers to productivity in the form of regulations, or by attempting to "rehabilitate" criminals who've proven to anyone willing to look squarely at what they've done that they're categorically wicked. Blatherings about social forces causing outcomes, children's differential life chances, and even the common good sound suspiciously like attempts to bring irrelevant considerations to bear on problems that aren't very difficult to analyze if we're willing to "take our emotions out of the equation." These liberal pleas are motivating excuses for an illogical and unfair, hidden, and *liberal* political agenda.

Weak categorization should produce, relatively, a looser kind of logical operations: linear effort-and-reward analyses holding isolated transactions as the sole unit of analysis simply don't *look like* comprehensive or even accurate descriptions of what happens when people engage in economic or any form of communal activity. Social and economic transactions do not even appear—not even at first glance—as occurring between two people; rather, they appear connected to the society as a whole—they may even "feel" to a thinker as though they're connected to forces of which the thinker is not quite consciously aware. Problems cannot be analyzed mechanically, and reducing problems to desert-and-reward-type considerations sounds less like getting down to what's really and obviously important than like oversimplification in service to a hidden *conservative* agenda. And emotions may feel less like distractions from the logic that accurately describes the world and more like relevant information that is simply difficult to describe. We will see, as this story unfolds, that there is indeed evidence that such a variance in deliberative style is related to categorization and may help produce conservative and liberal opinion formation—especially of the *secular* varieties.

For the moral varieties of ideology, high categorization strength is hypothesized to generate conservative thinking primarily via strong categorization of behaviors as good or evil, right or wrong, and of religious ideas or scriptures as absolute and hence deserving of special recognition by the state. This is a simple and facile prediction to make of course, and as it turns out, probably misses the mark by a good deal, but we shall allow the data to tell us more about that.

Describing the "mechanical" character I hypothesize to be a consequence of high-categorization cognitive style has been a challenge. Sometimes I suggest people picture liberals' and conservatives' minds as complex machines: neither need have more moving parts than the other, but conservatives' mental machinery has more "tightened bolts." Meanwhile, liberals' machinery has looser connections between parts. Perhaps we can push the metaphor further and say that for liberals, distant areas of the machine, systems which have nearly unrelated functions, are more often connected to one another (say, the air conditioner to the differential), while for conservatives, different systems in the machine are kept more separate.

Modestly helpful if wacky, I think. But thankfully, just weeks away from completing this dissertation, Dahlia Lithwick, writing for online magazine *Slate* on May 13, 2009, may have done me better. A liberal, she was writing to criticize Republicans who, as of that day, were apoplectic over President Obama's having announced that he seeks a Supreme Court justice with high levels of "empathy" to

replace the retiring David Souter. Conservatives, it appears, see "empathy" as code for "sloppy thinking," as opposed to the kind of thinking that a conservative jurist would employ: the tight and mechanical application of clear law to circumstances. Writes Lithwick,

> Sen. Orrin Hatch of Utah, speaking on *This Week,* warned that if a jurist were to show empathy, "politics, preferences, personal preferences and feelings might take the place of being impartial and deciding cases based upon the law, not upon politics." In an opinion piece in the *Washington Times* warning that Obama is poised to be the "first president to make lawlessness an explicit standard for Supreme Court Justices," Wendy Long of the Judicial Confirmation Network saw empathy as a kind of temporary insanity that so distorts a jurist's vision as to make it difficult "to uphold the federal judicial oath to dispense justice impartially." …

> Empathy—the quality of caring what others may feel—signals intellectual weakness, judicial immodesty, favoritism, bias, and grandiosity. John Yoo also seems to be of the view that the kind of emotional incontinence that begins with empathy for others quickly leads to being "emotive" on the bench. …

> Empathy means being impartial toward all litigants without being blind to the consequences of your decisions. You can send up such concerns as gooey judicial sentimentalism, unmoored from any fixed legal principle. Or you can admit that judging requires acts of judgment beyond the mechanical application of law to facts and that it's best for judges to know when the mechanical act of deciding cases gives way to ideology and personal preference. Empathy isn't sloppy sentiment. It's not ideology. It's just a check against the smug certainty that everyone else is sloppy and sentimental while you yourself are a flawless constitutional microcomputer.

In other words, Republicans, perhaps correctly, see that Obama wishes to nominate a justice whose mind is elastic, whose mental bolts are not so tight that the application of law to circumstances is obvious and mechanical. To conservatives, this appears as "gooey sentimentalism." To liberals, the more literal and narrow application of rules of law to clear-cut circumstances sounds like oversimplification and mental rigidity. Without value judgment (or, I should say, at least attempting to cleanse myself thereof), I simply hypothesize that the cognitive styles of conservatives are, in fact, more cleanly logical, and those of liberals more "fuzzy" and indeterminate.

C-Theory's basic propositions summarized

To sum up, the Categorization Theory of Ideological Thinking, in its most basic form, consists of the following 5 propositions.

1. One of the essential causes of ideological differences, particularly between modern "liberals" and "conservatives," is latent differences in cognitive style along a broad dimension of cognitive style characterized by flexibility and conceptual fuzziness on one hand, and by rigidity and conceptual mechanicalness on the other. A causally important part of this broad phenomenon is a narrower phenomenon called *categorization strength.* What we recognize as political conservatism is driven by a *higher degree of cognitive and perceptual categorization*, and more generally by the resulting cognitive rigidity and a more mechanical deliberative style.

"Rigidity" is not meant as a pejorative term, and in fact coherent arguments can be made that strong categorization pares down the list of potential category-invading remote possibilities that are largely irrelevant to deliberation on a problem, making for a more logical cognitive style that may characterize conservative thinking. Nor are conservatives and liberals hypothesized to differ in intelligence due to differences in the flexibility phenomenon. One good metaphor for the theory is to picture the political-social mind as a machine: we might say that it is not necessarily that liberals' mental machines have more moving parts—it is that the bolts are not tightened as much: for liberals, there is more "give."

2. Compartmentalization is an automatic phenomenon which occurs at the level of initial perception of objects and relationships in the world. In theory, it ought to be detectable shortly after a stimulus is encountered, and have predictable consequences for how cognitive operations are performed on political concepts and objects "downstream." (Pilot-study-level attempts to measure categorization strength "implicitly" have not yet succeeded, and will be discussed in the conclusion chapter.)

3. Strong or weak compartmentalization can have *direct consequences* for some issue positions, while affecting other issue positions through its effect on cognitive deliberation. In particular, it can directly cause people to take certain positions on simple issues where the degree to which the world is perceived as compartmentalized has strong implications for what position "feels right." For example, when a policy position is largely determined by how simply good or bad people seem, as with issues of criminal justice, strong categorization should make criminals appear more categorically bad and lead to support for harsher punishment. Likewise, foreign people should appear more categorically different to the strong categorizer, so high categorization strength should directly produce anti-immigration positions.

However, for other issue positions, compartmentalization has consequences via its effect on deliberative style, as with the example given above in which conservatives may see economic activity in more individualistic terms, or think more at the "single-transaction level of analysis," while liberals may perceive transactions in more organic terms. Again, this does not mean conservatives cannot see that transactions have external consequences, or that liberals cannot understand transactions in isolation. It is only that people reason about economic activity by

using concepts that have different meanings to them depending on how strongly categorized those concepts *appear* to them, implicitly.

4. Compartmentalization can have additional issue consequences *via its social consequences*: it is a salient trait which people unconsciously seize on to gravitate toward social groups. Strong compartmentalizers tend to congregate together, as do weak compartmentalizers (although there is a predictable asymmetry here—weak compartmentalizers should form less tightly bounded social groups). From these thus-formed social groups, additional issue positions can be *learned* which do not necessarily emanate directly from cognitive style. That compartmentalization would be a prominent "recognition" factor drawing together like-minded people into groups is an idea that would probably be endorsed by McCrae (whose focus is not categorization but Big-Five Openness, hence my use of the word *probably*). In his and Costa's (Costa and McCrae, 1988) study of trait similarity between husbands and wives, only two significant Big Five personality-trait correlations between spouses were found—for Conscientiousness and Openness. Moreover, he writes, "there are reasons to think that many elective social interactions are based in part on a shared standing on the dimension of Openness. For example, Openness is related to vocational interests." He cites also (in his 1996 paper) a study of Chinese high school students (Cheng, Bond & Chan, 1995) in which Openness showed the strongest correlation, among eight possible scales, between oneself and one's described "ideal friend."

5. Categorization has a chance to solve a longstanding mystery for observers of American ideological thinking: why would there be any particular reason for a political alliance of economic and social conservatives? While it remains the prevailing assumption that Christian conservatives and Libertarian free-marketers have been bedfellows of mere convenience, C-theory begins with the claim that psychology, in the form of categorization strength, is an indispensable part of the story that brings those two ideological camps together. But whereas at the outset of this project the mechanism was thought to be simple—fiscal and "social" conservatives would be found simply applying stronger categorization, and liberals weaker categorization, to different domains of policy—the emerging story now has it that *moral* conservatives are characterized less by an inherently categorizing cognitive style than by a preference for decisive leaders who themselves categorize the world particularly strongly.

I now take up a few issues of mild controversy before discussing empirical procedures and outcomes.

Isn't this just "black-white" thinking?

When I tell people about C-theory, I am frequently asked, particularly by liberals, whether it amounts to what is informally known as "black and white" thinking, with the obvious implication that conservatives are "black and white" thinkers. The answer is a qualified yes: categorization and cognitive rigidity are likely

to yield a cognitive style characterized by strong "either-or" propositions. And I even believe that this shorthand phrase is handy and quite useful for a casual understanding of what we "get" (as in, "I get it") at the Gestalt level about liberals and conservatives with regard to the flexibility/rigidity phenomenon. A very tough-minded conservative friend of mine once said, "It's true; when I'm in a crowd, I see black hats and white hats on everyone." This fact alone tells us much more than meets the eye about his politics.

C-theory, of course, has the advantage that it's grounded in more rigorous theory than armchair statements about "seeing everything in black and white" and it offers a chance to measure cognitive flexibility and rigidity in a new way, a way that's advantaged over trait scales and motivational need-for variables in that it's relatively cleansed of contaminating near-ideological content. And C-theory allows us to do real research on the deep psychology of ideology in a way colorful idioms alone do not. For these reasons alone, categorization research surpasses black-white metaphor in important ways, however useful the idiom.

But as it turns out, there is a small body of work by political scientist Betty Glad directly addressed to "black and white" thinking in conservatism, and it's worth noting, for it helps me to clarify what this research program is "all about"—because it's almost entirely unlike Glad's. Indeed, if by "black-and-white thinking" people mean what Glad means, then the charge that categorization strength is black-and-white thinking comes almost precisely to a charge that I am conducting Authoritarianism research, which I emphatically am not.

Glad (1983) follows the lead of Frenkel-Brunswick (1950) and the tradition of Authoritarianism reasearch in her analysis of President Ronald Reagan's approach to foreign policy. To Glad, black-and-white thinking serves an intrapsychic *need,* with which Reagan is saddled, to overcome ambivalence he feels toward his father. His father's inconstance in his life, that is, induced in Reagan a sort of "need for certainty" which he overcomes through a manufactured cognitive and perceptual rigidity made manifest in the overestimation of the evil and power of the Soviet Union. To be sure, by Glad's description, Reagan displays high levels of categorization strength as defined and discussed here. But the theory, like that of the Adorno team and that of the Jost team, is entirely motivational. Reagan disambiguates because it makes him *feel better.* In fact, Reagan's certainty is not a sign of self-confidence, but of a lack thereof; it is a compensatory strategy.

Although some intriguing evidence in the pages that follow indicates that the adoption of manufactured—i.e.*,* not implicit or psychologically elementary—disambiguation strategies might describe in part the mechanism generative of *moral* ideology, Glad's theory could not be more different from mine regarding ideology generally, and especially of the secular variety. Secular conservatives do not crave or need disambiguation to compensate for insecurities. They effortlessly see the world in sharp categories, already disambiguated. Perceptual categorization strength is a function of neural and neuro-conceptual network architecture, not of needs to compensate for the ill effects of poor parenting.

That is, not only do secular ideologues perform in ways that would appear very difficult to "motivate" on my tasks, but if Glad's black-and-white thinking were the same thing as categorization strength, moral conservatives and secular conservatives should swap places in their relative performances on tasks I have them perform.

Moreover, Glad's work is not empirically rigorous. It's fascinating, but there are no scientific tests, only anecdotes. Curiously, Glad's own citations of empirical work may contradict a motivational mechanism for rigid thinking. She cites a famous experiment reported by Frenkel-Brunswick in which ethnocentric children, presented with a series of pictures in which a dog morphs into a cat, hold on to the perception that the animal is a dog for longer than less ethnocentric children do. This quite obviously bespeaks a pre-conscious process with little theoretically plausible connection to parenting styles or intra-psychic pain-avoidance strategies. Glad sides with Frenkel-Brunswik, however:

> Underlying these cognitive proclivities, Frenkel-Brunswik suggests, is the fear of disorder. The black-and-white thinker lives on the edge of an abyss, menaced by a chaotic world into which he could be plunged should he permit any self-doubt.

Rather that assume that conservatives' evidently higher levels of confidence in their beliefs actually represents evidence of a hidden *lack* of confidence in their beliefs, I find that secular conservatives, at least, actually do see the world as relatively disambiguated—a much more parsimonious account. It is unreasonable (and quite biased) to assert that the decisive performance of conservatives on the numerous tasks I had subjects perform is the result of a strategy of compensation for inherent indecisiveness. And of course I have no data on the effect of people's fathers on such performance, but one cannot rule it out for future study.

At any rate, Reagan surely was a strongly categorical thinker. But my results suggest that he was more likely a tough-minded warrior with a naturally decisive disposition, facilitated by, yes, a black-and-white style of cognition, than a quivering coward trying to compensate for cognitive insecurity. For Reagan, decisiveness was effortless, while in his eyes the equivocations of liberals were maddening attempts to muddy waters that had always been clear.

In sum, categorization strength is not necessarily something entirely different from black-and-white thinking; they are both ways of understanding the broad cognitive rigidity phenomenon. But C-theory is a cognitive theory, not a motivational one, and the work on "black-and-white" thinking heretofore has been emphatically motivational, as is much of Adorno et al.'s work.

Aren't you just replicating the work of Jost, et al.?

The cognitive, not motivational, aspect of my work also distinguishes it from what is probably the most notable recent attempt to explain ideological thinking in

psychological terms. Jost and colleagues (2003) advance a "theory of conservatism" as motivated social cognition.

As do I, Jost et al. rest part of their case on correlations between political conservatism and personality trait variables such as Authoritarianism (Adorno, et al. 1950; Altemeyer 1988) and Big-Five Openness to Experience, adding that temporary changes in people's environments can push them to adopt more or less conservative belief systems to satisfy psychological, motivational and existential "needs" as such needs fluctuate.

Jost et al. begin with the *assumption*—their language, not mine—that ideological belief systems are adopted by people to "satisfy their psychological needs and motives (such as needs for order, structure, and closure and the avoidance of uncertainty or threat)." This theoretical orientation is entirely different from mine, for reasons already repeated numerous times.

Motivational influences are not exactly irrelevant in C-theory, of course: people who are motivated to, say, dominate others or help others, may in response find their cognitive styles evolving and adapting to such motivations. In this sense their latent ideological inclinations might change with their motivations without their ever taking up consideration of a single political issue. But in C-theory, motivation is a secondary concern.[4]

Similarly, Jost et al. review evidence (Altemeyer 1998) that conservatives see the world as threatening, and hence adopt conservative beliefs to address a need to manage threat. C-theory, while not discounting that some of this effect may occur, maintains that a catgorizing style leads automatically to perceptions of the world as threatening (since the "outside world" is seen as or imagined to be more distinct from the "familiar world"), even as it independently leads to other conservative beliefs entirely unrelated to threat—say, opposition to public assistance.

Jost et al. do recognize that personality traits are temporally prior to ideology, but regard traits as most useful for "identifying needs and motivations" that may be chronic as well as temporary. From my perspective, chronic needs and motivations are not easily distinguishable from personality traits. Openness, for example, could easily be recast as "Need for Openness." But people do not adopt beliefs or seek new experiences to "satisfy their need for openness." Rather, they do what they do *because they are open*—or, more accurately, because they possess large quantities of a deep psychological tendency of which Openness is an indicator.

Likewise, categorization is not conceived as a need, but rather as a style. People don't categorize strongly because at some "higher" level of cognition they've decided that they "need to." Rather, people see strong or weak categories without even realizing they're doing it, because it's been a successful cognitive strategy for them either during their lifetimes, or during the lifetimes of their ancestors.

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[4] Incidentally, I do not deny that the more "conscious"-seeming avenue described by Jost et al. is one possible way for people to arrive at certain beliefs: motivation to preserve one's wealth, for example, may very well be related to the adoption of anti-change beliefs, but such plausible processes are not of central theoretical interest here.

C-theory is a cousin of Silvan Tomkins's (1963) theory of ideo-affective polarity, reviewed by Jost et al. It "assumes that ideological predilections permeate nearly every domain of a person's life, including one's attitudes toward the arts, music, science, philosophy, and so on," an idea clearly endorsed also by McCrae (1996). Moreover, Tomkins's theory asserts that ideological orientations are influenced by early childhood experiences—something C-theory does not deny, but would not cast in Freudian terms as Glad does. C-theory offers, however, a closer look inside the black box.

Integrative Complexity (IC), incorporated by Jost et al., has been extensively studied by Tetlock (1983, 1984), using content analyses of archived speeches and interviews of political elites, and consistently greater integrative complexity is found in politicians of the left (although not the extreme left). Is IC the same thing as categorization? It's obviously similar, but rather than threatening to render my work superfluous, Tetlock's work motivates and supports mine. Integrative complexity correlates with liberalism, but *as measured*—by content analysis of political speeches—is actually just a way of expressing oneself (by utilizing multiple perspectives), and the correlation with ideology, like so many others discussed here, still warrants explanation. One of the most intriguing results I will show, as it turns out, involves a measure built explicitly on the IC idea, a variable I call "deliberative complexity."

There are more differences between C-theory and the Jost et al. approach. It's not, for example, even clear that Jost et al.'s argument that fear and threat cause conservatism is well supported in their own meta-analysis. They review a paper by Lavine, Polichak and Lodge (1999) which finds that high authoritarians are quicker to respond to threat words in lexical decision tasks than to non-threat words. That's an interesting asymmetry that seems to show either a stronger limbic response to notions of threat or, since these are only words, perhaps this reaction involves no limbic response at all and is confined to cortical function (see Tom, et al., 2007 for some support for this possibility). At any rate, Jost and colleagues interpret this result to indicate that conservatives have more "fear to manage," which they do by adopting conservative beliefs. C-theory takes a different view. First, it is unclear, based on a weighing of the evidence presented in Jost et al.'s paper, that conservatives really are more fearful than nonconservatives. The cross-study correlation between "fear and threat" and political conservatism is a mediocre 0.18, and while I decline to call a correlation of 0.18 paltry, as far as I can tell fear is entirely confounded with perceived threat across these studies. But perceptions of threat do not necessarily cause pure, isolated fear; anger or aggression are also functionally appropriate responses to threat, particularly when the organism has confidence that it can triumph over the threat (Mackie, et al., 2000). And in the pages that follow, conservatives—especially secular ones—will *not* appear more fearful than liberals.

C-theory takes Lavine et al.'s evidence to indicate instead a promising avenue for exploring ways in which life experience might affect cognitive style so as to bring about ideological thinking as an adult. Perceptions of threat (or, more generally, enmity), such as those that would dominate the worldview of someone intent on, and

especially someone successful at, domination or competition, would result over time in a chronically compartmentalizing cognitive style, allowing for a faster reactions to enemies due to unambiguous self-other classifications. The model would be "assertiveness/extraversion→categorization strength→conservatism," with a separate effect of "assertiveness/extraversion→threat perception" rather than "threat perception→fear→conservatism." Ideology is largely a response to a decisive and categorizing cognitive style that serves and facilitates an extraverted disposition, rather than a strategy for "managing" unwanted threats.

In sum, the essential difference between my research and Jost et al.'s 2003 paper is that Jost catalogs a slew of motivational variables—epistemic and existential (e.g., terror management) which correlate with, mainly, general conservatism. The conclusion? Conservatives are *motivated* to adapt conservative beliefs by intrapsychic needs which those beliefs satisfy.

What I show is that there is another class of variables that predict not only ideology, but in some cases (Ambiguity Intolerance, Need for Closure), the motives themselves. And these variables, which I call "cognitive process" variables, are difficult to cast as motivational. Unless we believe that performance on highly abstract categorization tasks and other nonideological cognitive tasks satisfy intrapsychic needs, it appears that cognitive differences affect political ideology without need for motives.

Ultimately, while Jost et al. in their 2003 paper do not expend much energy dealing separately with moral and secular ideology, their frequent use of Authoritarianism in place of conservatism indicates that they largely have moral ideology in mind. (I do not deal much with Authoritarianism in this work, but in my first student sample, I do indeed find that Authoritarianism is strongly and positively correlated with moral conservatism, $r = 0.27$, $p = 0.0001$, but not greater than $r = 0.06$, ns, with any other dimension of ideology.) My data indicate this is a sensible focus for Jost et al.'s theory. A motivational theory of *moral* conservatism seems to fit my data better (but is not demonstrated decisively) than it does any other dimension of ideology.

Well then what about other variables like Openness, Need for Closure, Ambiguity Intolerance, etc?

Readers familiar with the ideological literature may be familiar with a number of scales or personality inventories measuring such variables as need for certainty, need for cognition (see, e.g., Cacioppo et al, 1984), intolerance of ambiguity, need for nonspecific closure (Kruglanski and Webster 1996), Openness to Experience, integrative complexity (Tetlock 1983, 1984), and even the somewhat nutty alternate measure of Openness known as "Boundaries in the Mind" (Van Hiel and Mervielde 2004), all of which have been shown to correlate positively or negatively with ideological conservatism, authoritarianism, or membership in conservative political coalitions. It might be argued that my variable of greatest focus, categorization, is just an alternate measure of one or more (or all) of these, or that categorization might

correlate relatively poorly with ideological thinking compared with, or in the presence of the control of, one of these other, obviously related, variables.

This is a justifiable point to raise, as I do believe that categorization is part of the broad cognitive-flexibility phenomenon that these variables also tap. But I also think many of these variables tap other, pseudo-ideological content too, and hence there are good theoretical reasons to pursue categorization, a less ideological and more "purely cognitive" variable. Moreover, it's grounded in the broader and more general associative network concept of mind than are the other candidate measures mentioned above. That is, I have specified functionally, and nearly neurophysiologically, what categorization is likely to look like, and have begun to describe in semi-concrete terms *how it causes* ideological thinking. Many motivational variables almost need no specification of *how* they cause ideology. Ambiguity Intolerance, for example, very nearly *is* a non-political ideology, measured using questions that literally ask for opinions about what consistutes a good job, a proper way to do things, and so forth.

Later in the paper, I will address in more detail whether categorization strength is precisely the same thing as Ambiguity Intolerance (AI), as a professor has suggested that it is, and hence that my research program may be a superfluous regurgitation of past research. AI is undoubtedly the one variable most likely to be presented as a "competitor" to categorization. As AI is a concept grounded in Authoritarianism research, and is an explicitly motivational variable, this amounts largely to yet another insinuation that C-theory is Authoritarianism in disguise. It is very nearly an assertion that, having read *The Authoritarian Personality* and Betty Glad, one need not worry about C-theory. By the time I take up AI in detail in a later chapter, this will be an absurd notion, but the relationship between categorization and AI still warrants more attention, which I'll give it in due time.

What to expect from the empirical study:

Not every component of C-theory is tested here. Beyond cataloguing behavioral asymmetries, the most fundamental research activity has been to develop a task for the measurement of categorization strength and to test for whether it is related to ideology, and if it is, to test for whether it is related to a host of other psychological variables which either (a) are potential mediators between C-strength and ideological thinking or (b) are at least accompanying components of a broad cognitive flexibility/rigidity dimension which has powerful implications for how people think about political issues.

Next, I have attempted to design an experiment to demonstrate that categorization strength is causally prior to opinion formation by manipulating subjects' categorization strength temporarily and testing for short-term effects on left-right thinking. This experiment did not produce exactly the predicted effects, but it did produce *something*, as we shall see.

Beyond these most basic research activities, a wide range of variables are used to shed light on the overall categorization and cognitive flexibility phenomenon and

its relevance to politics. What emerges is a view of the ideological thinking process powerfully advanced from where it stood at the project's beginning. And yet the project itself seems only a beginning. It is almost as if, having established the broad contours of the phenomenon, "real" research on C-theory and its associated processes can only now finally begin to start making progress.

It is my highest hope that the reader will learn a great deal from the empirical work that follows. By this I mean something nonobvious. Yes, we should "learn" from any academic work. But mostly, the hypotheses for this dissertation have already been stated. Yet there is much to be learned about ideology, from the examination of test results, beyond merely whether these hypotheses are supported or disconfirmed. The elucidation of *ideas*, in all their richness, is not behind us with only their verification or falsification to follow. I continue to develop and elucidate the means by which cognitive flexibility and rigidity cause political liberalism and conservatism—and what constitutes cognitive flexibility and rigidity, through the various tests administered. I invite the reader to try to make his or her own sense of the results in parallel with my own efforts.

Chapter 2

General data and methods overview

  This project reports the results of four separate surveys or experiments that were administered over a period of several months. There were first two datasets comprised of students taking political science classes at Stony Brook University who received extra credit for taking the survey (N=183, N=168), then, because of concerns about the possible regional flavor of those samples, a single adult dataset gathered in Tallahassee, Florida[1] (N=112), followed by an "experimental" student dataset from Stony Brook (N=154). I also make tangential use of one additional dataset (another Tallahassee adult sample) I gathered for a separate research project. While each dataset had its own purpose and was designed either to administer a particular experiment or to build on previous datasets, there were many elements common to all of them, which is mainly what I'll discuss here. Details and differences will be discussed as they arise.

A bunch of correlations

  A variety of kinds of analyses will be performed in the pages that follow: some multivariate regression, some structural equation modeling, and some experimental methodology. However, in much of this dissertation we simply consider humble bivariate correlations. Correlations get a bad rap in the social sciences for their failure to take into account the effects of covariates (see, e.g., Achen 1977)—and it's true that a correlation between variables doesn't establish causation.

  Nonetheless, I will ask the reader to consider that just because correlation is not a causal model, this certainly doesn't mean the discovery that one variable moves with another tells us nothing of interest. A good sense of how things operate can come from the consideration of correlations, and in this dissertation, we will find that a large number of variables do move together. The Pearson and point-biserial correlation coefficients will get a good workout.

  This means that perhaps the most important "method" employed is to step back and think substantively about what is broadly implied by the web of intercorrelations. Many variables of the same family are used—say, various measures of cognitive "openness"—and it's both worthwhile to consider each one's relationship to ideology and silly to include them all in one regression, as though "controlling" for one another. If, say, Experiential Openness, a personality trait variable, moves with military ideology, while "Ambiguity Intolerance," a motivational variable, does likewise, including both in a regression predicting military ideology might well reduce Opennness to nonsignificance. But we would be

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[1] Note this convenience sample was quite nonrepresentative, sampled at upscale coffeehouses and professional offices, rendering it quite politically sophisticated.

foolish to conclude that the Openness-ideology correlation was spurious or that the Openness scale questions had nothing to teach us about military ideologues and their worldview. Nor should we conclude that "the effect of Openness is mediated by Ambiguity Intolerance," as that would suppose an unreasonable causal model that presumed Openness and Ambiguity Intolerance weren't measuring somewhat of the same thing, which they obviously are. If cognitive "flexibility" is a broad phenomenon, the components of which are just beginning to come into focus, then at this early stage of research, we learn the most about it when we consider *all its component variables.* We should take note of the theme of the Openness questions and how it differs slightly (and it is often slight) from that of Ambiguity Intolerance—for this helps us understand what aspects of the open-minded phenomenon do and do not seem related to ideology—and not toss Openness aside for its failure to survive control, proclaiming Ambiguity Intolerance the "true cause." We may suspect, even, that Ambiguity Intolerance is a measure more "contaminated" with ideology itself. This will require that we do something social scientists have become unaccustomed to doing: supplement the data with good qualitative observation.

It is silly not to admit that many of the variables used in this analysis—from personality measures straight through to ideology itself—are contaminated with components of each other. Convinced, in fact, that traits and motivational variables like Ambiguity Intolerance (not to mention values) are too close for comfort to ideology itself, I have endeavored to create cognitive-process variables that are "scrubbed" of ideology, so that I can argue that psychological processes completely different from ideology really do "cause" ideology. But I remain open to the possibility that even these variables may contain whiffs of "ideology itself."

This lack of confidence in "discriminant validity" should not stop the learning process, however. The recent research activity in the area of personality traits and politics—explaining conservatism with variables like (low) Openness and (high) Extraversion and Conscientiousness, or even with Ambiguity Intolerance or Need for Closure—amounts largely to explaining a political ideology with an apolitical one. But much is still learned from these new "discoveries," just as much about right-wing ideology was learned from Authoritarianism research despite the very justified criticisms that various Authoritarianism scales were just right-wing ideology re-worded. So if Ambiguity Intolerance is not-quite-overt conservatism of a certain stripe, and my own "deliberative complexity" is part of the same family of cognitive-rigidity-and-flexibility variables and is farther from ideology still, and if categorization strength is still farther away from having a recognizable silhouette of ideology in it, then seeing that all these variables move together gives us a much more complete picture of what ideology is and how it works than just recognizing a trait-ideology relationship. And it certainly teaches us much more about ideology than declining to study the phenomenon because "just taking stock of a bunch of correlations" isn't a valid research strategy.

This gives me an opening to discuss a bit more the underappreciated, disrespected correlation coefficient. I have heard it bemoaned that we are doing a

poor job of understanding so many phenomena in political science because we are beset with low, if significant, correlations, say, at about the level of r = 0.3 or lower. That's only 9% of the variance explained or less!

Let me argue that we should revise our concept of what constitutes a "high" and a "low" correlation in this area of research—especially in political psychology, where we use multi-item scales to measure "stuff." These are nebulous latent variables like traits and cognitive styles that, being intellectual constructs, don't even exist in a physical sense, and measurements are bound to be noisy and contaminated by other stuff (like intelligence, attention paid to surveys, etc.) that we don't intend to measure.

0.3 should not be regarded as a low correlation. True, it means only 9% of the variance explained. But the correlation coefficient is also the XY-standardized bivariate regression coefficient. That is, r = 0.3 means that a 1 standard-deviation increase in X is associated with a 0.3 standard-deviation increase in Y, and that doesn't sound so trivial.

There is also a curious inconsistency in the way we regard scale construction and the way we treat correlation coefficients as revealing robust relationships in our data. A correlation of, say, 0.35 is sometimes discussed as though it were not much to write home about, with one variable explaining just over 12% of the variance in the other: we've barely explained a thing. However, if we have a five-item scale in which the five items all intercorrelate at exactly 0.35, we calculate a Crohnbach's α to equal 0.72—a reliable scale! According to measurement theory, each of these 5 "indicators" is an alternate measurement of the *same thing*. In other words, a correlation of 0.35, which can be dismissed as verging on trivial in bivariate analysis, is in measurement theory regarded as a plausible result of two questions *measuring exactly the same thing*.

In fact, if two scales are *constructed so as to measure exactly the same thing*, and if their alphas are the same, then under certain conditions their correlation is r = α: alpha is an estimate of the so-called "intraclass correlation coefficient." Roughly, this is how a scale would correlate with a hypothetical second scale designed to measure the same concept and of equal reliability (such as the hypothetical "other half" of a split-half reliability check). So if we have two latent variables both measured at reliability $\alpha = 0.7$, we should be very suspicious about claims that we have "explained" one variable with the other where those two variables' intercorrelation approaches 0.7. We should not be expecting correlations this high between two multi-item scales, and correlations this high suggest either two variables measuring the same concept or data anomalies.

In general, in psycho-political research, I think we should regard correlations of 0.2 as well worth discussion, 0.3 as strong, 0.4 as extremely robust, and 0.5 as damn near suspicious, unless on their face the two scales or two questions clearly aren't tapping the same thing. So henceforth I will regard correlations of 0.3 as indicative of something major going on.

I believe this is justifiable not only on statistical but theoretical grounds too: where 10% to 20% of ideological variance is explained by a particular psychological variable (and

where even this is probably an underestimate because of measurement noisiness), this effect, in the real world, is likely to appear quite pronounced. To illustrate, suppose two personality variables, A and B, are correlated at 0.333. Each only explains 10% of the variance in the other. Now suppose that a personality trait becomes *noticeably* a part of someone's makeup when they're above the 75th (or below the 25th) percentile on that trait. How often would we expect to encounter someone "noticeably" high in traits A and B, compared with noticeably high in trait A but noticeably low in trait B? We'd see someone who is "high-high" more than 3 times for every one "high-low," and that would make quite an impression on us! With known confirmation biases (see, e.g., Mynatt, et al. 1977; Taber and Lodge 2006), we'd possibly even exaggerate the effect in our perception of it, concluding that people high in trait A are "always" high in trait B. We'd come to see the two traits as strongly connected, even part of a single personality profile—with only 10% of the variance in one trait explained by the other.

Now imagine that variable A is a cognitive trait and variable B is a dimension of political behavior. It would be quite noticeable that people high in the trait voted, say, in the same way—and the sociopolitical effects would be quite profound. Even people who didn't think much about politics would be quite likely to vote "correctly" for their psychological profile. Even if "on the spot" while taking a survey they didn't know how to answer an issue position question, given a chance to think about it—and take advice from like-minded friends—just that little 10% of the variance explained would exert considerable pressure on them to settle, eventually, in the "right" position for that issue.

Measuring Ideology

Each of my surveys measured ideology in two ways: by self-identification and by a battery of issue-position questions. Self-identification was, in every case, measured in multiple dimensions: first, with a general liberalism-conservatism question, and then questions about self-placement as "fiscal" and "social" ideologues.

The self-identification questions were typical 7-point Likert-type items, beginning with the basic question,

> Overall, in your views on politics and society, how would you place yourself between VERY LIBERAL and VERY CONSERVATIVE?

The "social" and "fiscal" ideology self-placement questions endeavored to address the possibility that less sophisticated subjects might not be familiar with these basic concepts by including short descriptions of what was meant by "social" or "fiscal." The questions read,

> On SOCIAL ISSUES such as the role of religion in schools, the marriage rights of homosexuals, and the societal role of traditional moral values, where do you see yourself between "very liberal" and "very conservative"?

and

> Now, on ECONOMIC or FISCAL issues, such as patterns of
> government spending, budget balancing, and taxation, how do
> you see yourself?

Ideology was also measured using questions about subjects' stands on general political issues such as the death penalty, abortion, the role of government in the economy, and so forth (as opposed to particular bills pending). These issue-position questions were factor-analyzed in an attempt to discover "dimensions" of ideology which could then be predicted by various psychological variables. After factor analysis, the dimensions were generated *not* by scoring the factors, however, but by generating additive scales, using Stata 9's "alpha" command. Alpha scores will be reported along with results using these scales.

Table 2.1 shows all the issue-position questions which are used in ideology scales across the multiple surveys. Some issue questions were *not* ever used in a scale and, where used for analysis, will be discussed as they arise. Note that not every issue-position question from table 2.1 was used in a scale in every survey. The content of individual scales will be discussed as they arise.

In measuring ideology, I mainly use additive scales rather than factor scores. The reason for this is that certain questions' responses can dominate factor scores— i.e., the questions which load most strongly on the factor—and this increases the probability that we will observe what appears to be a significant relationship between a psychological variable and an ideology factor which is, instead, only a relationship between the psychological variable and a single, strong-loading question. When measuring "fiscal ideology" I do *not* want to measure primarily "feelings about income taxation" along with a small amount of feeling about other issues; I want to measure *general* fiscal ideology. Hence, additive scale construction forces each item which loaded adequately on an ideological dimension during factor analysis to make an equal contribution to the scale. The result is a scale which correlates very strongly—typically above .9—with a factor-scored dimension, but which does not "hide" certain questions while emphasizing others.

Finally, since there are different numbers of response options for different questions, the responses are standardized before being included in the scale, so that a one-standard-deviation difference in approval of, say, physician-assisted suicide makes the same contribution to the moral-ideology scale as does a one-standard-deviation difference in approval of gay marriage.

When structural-equation models are used, this practice is not followed; ideological dimensions are necessarily measured by latent factors created from items which load at various strengths.

Psychological variable scales

The essential mission of this project is to connect opinion-formation outcomes with causally prior psychological processes, so among the most important "right-side-of-equation" variables are psychological variables. These include common traits and traitlike variables, typically measured via existing (i.e., I didn't create them) multi-item scales; and what are intended to be more abstract, or ideology-free *cognitive process* variables, typically measured via *new* (i.e., I wrote them) multi-item scales.

Traits and traitlike variables

By traits, I mean the "Big-Five" traits (Costa and McCrae 1985), of which I use four: Experiential Openness, Energy-Extraversion, Agreeableness, and Conscientiousness. I do not use Neuroticism because few studies I'm aware of have found a relationship between Neuroticism and opinion formation (although see Gerber, et al. 2009). The traits and their measurement will be discussed more completely later, but the questions were taken from the International Personality Inventory Pool (Goldberg et al., 2006), and the number of questions used for each trait scale was usually 4 or 5—representing a quite truncated scale—but sometimes exceeded 10 and sometimes was as few as a single item.

By trait*like* variables, I typically mean a class of variables often associated with "motivations." These include Need for Nonspecific Closure" (Kruglanski and Webster 1996) and Ambiguity Intolerance (Budner 1962; MacDonald 1970). Need for Closure is conceptualized as a motivation to quickly resolve uncertainty regarding any question at hand, also to maintain beliefs, once formed, unchanged. Ambiguity Intolerance is a concept first introduced as a personality measure by Frenkel-Brunswik (1948) and modernized by numerous other authors to measure the motivation to avoid anxiety or intrapsychic displeasure associated with uncertain or ambiguous situations (Carver, 2006). Both of these variables are measured using truncated scales comprised of selected questions from the Kruglanski-Webster or Budner and MacDonald scales.

Both Big-Five traits and the Need for Closure are measured by self-report. Subjects are asked to rate the accuracy of certain statements about themselves on five-point Likert-type scales ranging from "very accurate" to "very inaccurate." Ambiguity intolerance is measured in a very similar fashion, with the exception that the options range from "strongly agree" to "strongly disagree" in response to questions which ask respondents to endorse or disavow certain perspectives (e.g., whether a good job is one for which tasks are clearly defined).

Table 2.1. Issue-position questions used to measure ideology.

Informal question title	Question wording	Number of response options (ro) and notes
Should gov't see to jobs?	Do you think the government should see to it that every person has a job and a good standard of living, or do you think the government should let each person get ahead on their own?	ro = 5: from "strongly feel gov't should see to job…" to "strongly feel gov't should let each person get ahead…"; question taken from National Election study
Tax the rich to help the poor?	Should the government in Washington try to reduce the income difference between the rich and the poor by taxation on the wealthy, or is this not the government's concern?	ro = 4: "strongly" to "strongly"; NES question
Death penalty	How strongly do you favor or oppose the death penalty for persons convicted of first-degree murder?	ro = 4: "strongly" to "strongly"
Immigration	Do you think the number of immigrants from foreign countries who are permitted to legally live in the United States should be increased, decreased, or left the same as it is now? And how much?	ro = 5: "increased a lot" to "decreased a lot"
Gay marriage	Which of the following comes closest to your position on allowing gay or lesbian couples to marry or have some other kind of legal recognition?	ro = 3: "I support fully legalizing homosexual marriage"; "I support some kind of legal recognition for homosexual couples, but not marriage"; "I generally oppose any legal recognition for homosexual couples."
School vouchers	How strongly do you favor or oppose a SCHOOL VOUCHER program that would allow parents to use tax funds to send their children to the school of their choice, even if it were a private or religious school?	ro = 5: "strongly oppose" to "strongly favor"
English-only laws	Do you favor a strong law making English the only official language of the United States, meaning all government business in all 50 states would be conducted in English only, or do you oppose such a law, and how strongly?	ro = 5: "strongly oppose" to "strongly favor"
Iraq war	Looking back, think about whether you feel the U.S. did the right thing in going to war in Iraq, or whether the U.S. should have stayed out. On a scale of 1 to 5, "1" is strongly believing going to war was the RIGHT decision. "5" is strongly believing going to war was the WRONG decision. Where do you stand?	ro = 5: all options clearly labeled

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Table 2.1, continued

Global warming	Which of the following best describes your opinion of how serious a threat HUMAN-CAUSED GLOBAL WARMING is?	ro = 6: 1. Very serious threat to the world, demanding immediate and intense action; 2. Moderate threat to the world, demanding moderately high level of action; 3. Mild threat to the world, but not one of our most urgent challenges; 4. It's really happening, but it's really not much of a threat; 5. It's not really happening—atmospheric scientists either aren't telling the truth or are misinterpreting their data; 6. It's happening but there's nothing we can do about it, so no action is called for. (Answers of 6 recoded to 4)
Pro-environmental regulations on business	Some people strongly believe we need much tougher government regulations on business in order to protect the environment. Say those people are a "1" on a scale of 1 to 5. Others strongly believe current regulations to protect the environment are already too much of a burden on business. Say those people are a "5." Where do you stand on this issue?	ro = 5; NES question
Unilateral versus multilateral foreign policy	Some people strongly believe that, in dealing with uncooperative nations like Iran and North Korea, the U.S. should mainly collaborate with other nations, working through international organizations and coalitions and consulting the opinions of other nations. Say those people are a "1" on a scale of 1 to 5. Others strongly believe that the U.S. should deal with these difficult nations on its own, as it sees fit, without consulting other countries or working through international organizations. Say those people are a "5." Where do you stand on this issue?	ro = 5
Is abortion murder?	Regarding ABORTION, I feel…	ro = 5: 5 buttons with endpoints labeled "Abortion is murder" and "Abortion is not murder," and the middle point labeled "neutral/no opinion."

Table 2.1, continued

Gov't intervention in the economy	On *how strongly the gov't should oversee the economy, versus how much we should let the free market determine the success of the economy without gov't intervention,* I feel…	ro = 5: 5 buttons with endpoints labeled "Need strong government to oversee economy" and "Free market should be allowed to determine econ. outcomes," and middle point labeled "neutral/no opinion"
Military strength	On *the idea that we might have to decrease military spending to deal with other problems like education, health care or the deficit, versus the idea that we must maintain or increase our current level of military strength no matter what,* I feel…	ro = 5: 5 buttons with endpoints labeled "Must increase military strngth, even if other problems stay unaddressed" and "Must be willing to sacrifice military strength to address other problems," middle point labeled "neutral/no opinion"
Alternative lifestyles	Regarding *the notion that new, so-called "alternative" lifestyles are harmful and are contributing to the breakdown of society, versus the idea that they are good for society because of the variety they bring,* I feel…	ro = 5: 5 buttons with endpoints labeled "Alternative lifestyles not only harmless, but are good for society" and "Alternative lifestyles hurt society badly and we must limit their influence," middle point labeled "neutral/no opinion"
Ten Commandments and school prayer	On *whether posting the Ten Commandments in public schools, or having official prayers in public schools, is a good thing to do…*	ro = 5: 5 buttons with endpoints labeled "Strongly feel it is a BAD idea to post 10 Commandments or have school prayer" and "Strongly feel it's a GOOD idea to post 10 Commandments & have school prayer," middle point labeled "neutral/no opinion"
Government helping the poor	On *whether government does too little, just enough, or too much to help the poor,* I feel…	ro = 5: 5 buttons with endpoints labeled "Government doing FAR TOO MUCH to help the poor" and "Government doing FAR TOO LITTLE to help the poor," middle point labeled "Gov't doing just the right amount."

Table 2.1, continued

Physician-assisted suicide	On *whether terminally ill people should have a right to physician-assisted suicide…*	ro = 5: 5 buttons with endpoints labeled "Feel STRONGLY that people should NOT have a right to assisted suicide" and "Feel STRONGLY people SHOULD have a right to assisted suicide," middle point labeled "neutral/no opinion"
Jobs for minorities	On *whether government agencies should consider a job applicant's race when hiring, in order to make sure minorities are represented in the government's work force…*	ro = 5: 5 buttons with endpoints labeled "Feel strongly that gov't SHOULD consider job applicant's race" and "Feel strongly that gov't should NOT consider job applicant's race," middle point labeled "neutral/no opinion"
Israel and the Palestinians	*Whether, in the conflict between Israel and the Palestinians, the Israelis are mainly in the right, the Palestinians are mainly in the right, or neither side is in the right...*	ro = 5: 5 buttons with endpoints labeled "Feel strongly Israel is in the right" and "Feel strongly that Palestinians are in the right," middle point labeled "Neither side is in the right/both sides equally right and wrong"
Public versus private health care	*Whether it is better to have a publicly funded health insurance system for all Americans, or whether a for-profit private health care system is best for Americans...*	ro = 5: 5 buttons with endpoints labeled "Feel STRONGLY that publicly funded system is best," and "Feel STRONGLY that private system is best," middle point labeled "neutral/no opinion"
Constitutional literalism	*Whether the U.S. Constitution should be interpreted by judges in somewhat new and different ways as the times change, or the Constitution should be interpreted as literally as possible to keep its meaning the same as the years pass...*	ro = 5: 5 buttons with endpoints labeled "Feel STRONGLY that Const. should be interpreted strictly regardless of times" and "Feel STRONGLY that Const. should be interpreted differently as times change," middle point labeled "neutral/no opinion"

Table 2.1, continued

Income tax fairness	Suppose you have a job in which you make a good deal of money. You would be in a high income tax bracket, meaning a higher percentage of your income would be paid to the government than if you made less money. Where on the scale below would be closest to your attitude about paying this tax money?	ro = 4: "1. My job pays me a large share of society's wealth (which belongs to everyone), so income tax is a legitimate way of having me 'share my good fortune back' with society" and "4. I made that money myself, so it was rightfully MINE before being taxed away from me; income tax is therefore very nearly a form of theft." The middle options are labeled "leaning toward response 1" and "leaning toward response 4."
Crime reduction	Some people say the best way to reduce crime is to address the social problems that cause crime, like bad schools, poverty, and unemployment. Say those people are a "1" on a scale of 1 to 5. Others say the best way to reduce crime is to make sure criminals are caught, convicted, and punished harshly. Say those people are a "5." Where do you stand on this issue?	ro = 5: "strongly" to "strongly"; question taken from NES
Should government help people generally?	Some people believe that American society should take a pro-active role in helping its less fortunate citizens—and actually helping everyone—to improve their lives by providing ample services, such as education, financial and food assistance, job training, child care, and others, through government. Others feel the government should let each individual make it on his or her own. Giving an individual too much help for free makes a person lazy and less likely to take responsibility. An individual who truly wants to succeed will find a way to climb up on their own, and that's what should be allowed to happen. Where do you stand on this issue?	ro = 5, "strongly" to "strongly" with response options extensively labeled, e.g., "SOMEWHAT feel gov't should help people succeed, but in moderation."

Notes: Questions were written by the author unless indicated otherwise under the item notes. "Strongly" to "strongly" means the response options were labeled to range from "strongly" in one direction to "strongly" in the opposite direction. In such cases, if the number of response options was odd, there was a neutral position. If not, there is no neutral position available to participants.

Whenever trait questions were administered—in all samples—the questions were administered consecutively, but in an order randomized for each participant. In general, after the first student sample was surveyed (for which relatively many trait questions were used to measure each trait), fewer trait questions were used to measure each trait. Which items were used to measure a trait in a particular sample will be discussed as it becomes relevant. Question wordings for traits and traitlike variables can be found in table 2.2.

Cognitive process variables

To my mind, asking subjects to endorse points of view sounds vaguely like a measurement of a certain kind of *ideology*. This limits the explanatory potential of Ambiguity Intolerance, and to a lesser extent of trait variables. If I am claiming that perceptual categorization strength is a very fundamental cause of ultimate opinion-formation outcomes, then a natural modeling strategy is to place mediational psychological variables between categorization strength and opinions.

But if we utilize mediational variables that are "too far along the causal chain"—that is, which are so immediately prior to political ideology that the outlines of political opinions are almost perceptible in the psychological variable's scale itself—then we explain very little with a finding that categorization strength causes both a traitlike motivation and a political ideology. I devised therefore measurements of two cognitive-*process* variables for which it is more difficult to argue that they are clandestine measurements of ideology.

One of these measurements is a series of questions which attempts to measure a construct similar to *integrative complexity* (Tetlock 1983, 1984)—the extent to which an individual utilizes and integrates multiple perspectives to understand events in the world.

The measure I created, which I call "deliberative complexity," will be discussed in greater detail in a later chapter, but the reader needs to know now that it is designed to measure the extent to which people understand a "because relationship" in a simple, mechanical way as opposed to a complex and "organic" way. I use the term "because" rather than "causal" because the items do not necessarily tap event-to-event causality. Rather, a statement may be true, the case may simply be the case, either "because" of one main reason, or "because" a multitude of reasons swirl together…or somewhere in between. For example, one item asks, "Why might it be a good idea for children to do their homework every night?" In this second item, it's not clear that some "event" "causes" it to be a good idea to do homework. However, if it's a good idea, it's still good for a reason, and that reason can be more or less complex. For all such items (there are only four of them), subjects can select either a simple, main "reason why" or a more convoluted description of how multiple reasons swirl together, or points in between these two extremes.

Table 2.2. Trait and traitlike variable items

Question wording	notes
Big-5 Openness to Experience	
I believe in the importance of art.	5 response options for this and all other trait items except for Ambiguity Intolerance: "very inaccurate," "inaccurate," "neither accurate nor inaccurate," "accurate," and "very accurate."
I have a vivid imagination.	
I carry the conversation to a higher philosophical level.	The word "philosophical" is not part of the original IPIP item and was added after the first student dataset was gathered.
I avoid philosophical discussions.	
I rarely look for deeper meaning in things.	
I enjoy wild flights of fantasy.	
I get excited by new ideas.	
I am not interested in abstract ideas.	
Big-5 Extraversion	
I start conversations.	
I energetically talk to a lot of people at parties.	The word "energetically" was added by the author.
I keep in the background.	
I have little to say.	

Table 2.2, continued

I don't like to draw attention to myself.	
I am quiet around strangers.	
I take charge.	
I find it difficult to approach others.	
I wait for others to lead the way.	
I am a very private person.	
Dominance (from IPIP)	
I win confrontations.	
I enjoy it when I outdo others.	
I am quick to correct others.	
I impose my will on others.	
I demand explanations from others.	
I like to control the conversation.	
I am not afraid of providing criticism.	
I assertively challenge others' points of view.	The word "assertively" was added by the author after the first student dataset
I lay down the law to others.	
I like to put people under pressure.	
I hate to seem pushy.	
I avoid confrontations.	
I let myself get pushed around.	
Other extraversion-related items, mostly written by the author	
I see myself as a good leader.	

Table 2.2, continued

I tend to lead others.	
I am comfortable having power.	
I am comfortable having authority over others. (IPIP item)	
I dislike having authority over others. (IPIP item)	
I dislike taking authority for making decisions.	
Decisiveness and persuadability items written by the author	
I make decisions with confidence and I don't look back.	
I usually make important decisions confidently and quickly.	
I would describe myself as indecisive.	
I often change my mind.	
I have backbone, meaning a strong, steady, solid character.	
I am not wishy-washy about things.	
My values are the same as they were 5 years ago, and I don't see anything changing.	
Even if I have an opinion, a well-written argument often gets me to change my mind.	
I am very interested in the reasoning of people who hold a different view than mine.	
Once I hold an opinion, it's very difficult to get me to change my mind.	
I'm darn proud of the opinions I hold. Good luck trying to convince me I'm wrong.	
Even after I've made up my mind about something, I am always willing to consider a different opinion.	
Big-5 Agreeableness	
I sympathize with others' feelings.	
I have a soft heart.	
I take time out for others.	
I feel others' emotions.	

Table 2.2, continued

I am not interested in other people's problems.	
I feel little concern for others.	
I know how to comfort others.	
I am hard to get to know.	
Big-5 Conscientiousness	
I am always prepared.	
I pay attention to details.	
I get chores done right away.	
I like order.	
I follow a schedule.	
I often forget to put things back in their proper place.	
I shirk my duties.	
I make plans and stick to them.	
I find it difficult to get down to work.	
I do things in a halfway manner.	
Need for Closure	
I dislike unpredictable situations.	
I'd rather know bad news than stay in a state of uncertainty	
When trying to solve a problem I often see so many possible options that it's confusing.	
I prefer interacting with people whose opinions are very different from my own.	
It's annoying to listen to someone who cannot seem to make up his or her mind.	
I like to know what people are thinking all the time.	
In most social conflicts, I can easily see which side is right and which is wrong.	

Table 2.2, continued

I hate to change my plans at the last minute.	
I feel uncomfortable when I don't understand the reason why an event occurred in my life.	
When dining out, I like to go to places where I have been before so that I know what to expect.	
I don't like situations that are uncertain.	
I dislike questions which could be answered in many different ways.	
Ambiguity Intolerance	
(From Budner scale)	
An expert who doesn't come up with a definite answer probably doesn't know too much.	Five response options, from "strongly agree" to "strongly disagree," for all Ambiguity Intolerance items
A good job is one where what is to be done and how it is to be done are always clear.	
What we are used to is always preferable to what is unfamiliar.	
A person who leads an even, regular life in which few surprises or unexpected happenings arise, really has a lot to be grateful for.	
(From MacDonald scale)	
There's a right way and a wrong way to do almost everything.	
Vague and impressionistic pictures really have little appeal for me.	
Before an examination, I feel much less anxious if I know how many questions there will be.	
I don't like to work on a problem unless there is a possibility of coming out with a clear-cut and unambiguous answer.	

The deliberative complexity series has a great advantage, I believe, in measuring cognitive style, over the more traitlike variables such as Openness and Ambiguity Intolerance: it is not a measure of a non-political ideology or opinion-based worldview. That is, subjects are not asked *whether* it's good to do homework every night, nor are they asked what kind of fish dish constitutes a great one. They are not asked to say, as in the Ambiguity Intolerance series, what kind of job is a good one or whether moral certainty is attainable generally ("There is a right and a wrong way to do almost anything"). They are only asked what kind of reasoning process leads to a certain conclusion—*with the conclusion the same regardless of the complexity of the reasoning process.* Nor are subjects describing their personalities, acting as observer-intermediaries between their "true" personalities and our measurement of them. They are instead reacting in a direct way to alternate versions of deliberation about a simple "because relationship." Hence, this task comes much closer to representing an actual observation of cognition in motion than any trait or motivation-scale measurement.

Another cognitive-process variable created for this study is a measurement of the extent to which a subject perceives actions committed by other individuals to be the result of a trait inherent in the individual versus situational factors. This is, very nearly, an attempt to measure individual differences in the tendency to commit the fundamental attribution error (Ross, 1977; Jones and Nisbett 1972; Ross and Nisbett 1991). The variable is called "attributionism." Subjects are presented with a very short, typically one-sentence, vignette describing an event that has happened involving at least one individual—for example, perhaps someone has failed to pay rent for two months. Subjects are then asked which explanation best accounts for the event, on a scale with two endpoints. One endpoint "explains" the event by affixing a trait to the individual involved: "He is an irresponsible person." The other endpoint describes a multi-faceted situation that led to the occurrence.

It is, of course, arguable that part of fiscally conservative ideology is the tendency to view life's failures as the fault of the individual rather than as caused situationally, and there is evidence that conservatives are more likely than liberals to view poor people's predicament as a result of negative traits (Zucker and Weiner, 1993), so the "attributionism" items make an effort to extract a *general* tendency to see both positive and negative general behaviors—not specifically financial difficulty—as trait- versus situation-driven.

The attributionism measure is, like deliberative complexity, a theoretically superior concept to traits and motivations. The good and bad event outcomes (someone helps an old person with their groceries, someone misses an appointment, someone's business succeeds, someone acts rudely) are unambiguously good or bad, so the question is not whether or not the event outcome is a good one; the question is not about what kind of life is the best (such as one with few surprises, or one spent in art museums). The measure involves no self-description. The participant simply indicates the more plausible explanation for an event. It comes, therefore, much closer to measuring an actual cognitive process, *in process.*

C-theory predicts that both deliberative complexity and attributionism will be connected to perceptual-cognitive categorization. Specifically, high levels of categorization should "cause" low deliberative complexity and high attributionism (according to theory; causal direction is not currently empirically established). The theory behind this is entirely obvious, but I will discuss it further in chapter 8.

Behavioral asymmetries

As previously mentioned, the first student dataset was primarily designed to measure behavioral asymmetries between liberals and conservatives, casting a broad net to assay behavioral differences which could potentially be explained by a single deeper general psychological process difference. And although the other datasets endeavored to investigate liberal-conservative cognitive differences more systematically, a few of these behavioral asymmetries continued to hold a place in my surveys up to the very end of the project.

While these are not scales designed to measure recognized psychological dimensions such as Openness, Extraversion, Integrative Complexity, and so forth—typically they consist of only a single and often quirky question, such as whether a subject "dominated others" during middle school or prefers a boyfriend or girlfriend who acts a certain way—and while their entertainment value undoubtedly exceeds anything else in this dissertation (which may tempt some to take them unseriously), I want to pause for a moment to emphasize their scholarly value, which might eclipse even their entertainment value. For it is arguable that from within the behavioral asymmetry questions emerges a powerful gestalt-level understanding of what it means to think and act like a liberal or a conservative, an understanding that's less accessible from the more "rigorous" trait scales. That is, taken as a whole, these behavioral asymmetries feel less like scattered relationships between this or that behavior with liberalism and conservatism than like an inchoate measure of a broad psychological phenomenon.

This is a "methods chapter," so the method I am advocating here is to step back and reflect on these behavioral asymmetries as more than mere curiosities, and as more than what they are set up to be. (They are set up to be pointers toward categorization strength.) I am asking the reader to treat the asymmetries as a legitimate psychological variable, or variables, on their own, as an opportunity to advance considerably his or her understanding of what liberalism and conservatism are.

Categorization will often *but not always* predict these asymmetries. A narrow approach might tell us that, where categorization fails to predict an asymmetry which itself predicts liberalism and conservatism, we should treat the asymmetry as theoretically unimportant for C-theory, or at best report it in an appendix or a late-chapter "round-up of unrelated findings." I think this would cause us to miss an opportunity to greatly advance our understanding of who liberals and conservatives really are.

This amounts to a special request: in considering the asymmetries specifically, and also in considering all the results presented, I am asking the reader to allow my

"methods" to go beyond Popperian "negative science" (Popper 1959) and pursue understanding broadly. Of course I do follow scientific procedures of proposing hypotheses and testing them via quantitative analysis of various kinds. And yes, to reveal another result broadly, we will ultimately find very strong quantitative support for the argument that "perceptual categorization strength predicts political conservatism."

But we are not only concerned with mathematical verification and falsification of isolated statements; deep insight is sought. Most honestly, your humble author remains unconvinced that categorization theory sums up *exactly* what drives conservative and liberal opinion formation. Categorization theory is, in a Popperian sense, sure to be "false." And yet it's surely less false than much previous theory; it presents us with enough of a whiff of something big, something deeply psychological, something we perhaps haven't directly defined or measured yet but that's really driving ideological opinion formation, that this approach turns out to have been extremely valuable.

The work conducted in this dissertation, then, is philosophically Lakatosian (1970), rather than Popperian in its scientific approach. As Ketelaar and Ellis put it,

> Although the method of falsification is useful for evaluating the scientific status of specific statements, it is an inappropriate strategy for directly evaluating the theories that generate such statements. Theories are evaluated relative to each other. From a Lakatosian perspective, a theory may be retained as the best available explanation of a given domain, even if the theory has experienced predictive failures.

C-theory's predictor variables do not perfectly predict ideology. Some of the hypotheses generated turn out not to be true. But C-theory is progress, something for which I believe a relatively weaker case can be made of narrower studies which often hew too closely to exhortations of confinement to "normal science" (Kuhn 1996).

Measuring categorization strength

The categorization-strength measure is itself a direct measure of a behavioral asymmetry. As described earlier, at least a sizeable subset of subjects from every dataset performed this task. They were given multiple objects, relationships or concepts and asked either to place them into category-boxes (or circles), or to place them *between* the boxes to indicate that they belonged simultaneously to both categories, or between the categories. Placing an object inside a category was accomplished by clicking on the button displaying the category name, and placing an item between boxes or circles was accomplished by clicking on the button between boxes or circles (see figure 2.1 to make this description clear). A subject might encounter, say, 10 opportunities to place an object into the categories "furniture" and

Figure 2.1. Examples of actual categorization tasks used in surveys

YOU HAVE approx. 5 SECONDS TO CLASSIFY EACH THING!

Classify… ABILITY TO ENJOY MUSIC

Essentially ANIMAL things

←→

Essentially HUMAN things

YOU HAVE approx. 5 SECONDS TO CLASSIFY EACH THING!

Classify…

POLITICAL CANDIDATE: VOTER

Relationship is DOMINANT/SUBORDINATE

∧ - ∨

Relationship is NOT DOMINANT/SUBORDINATE
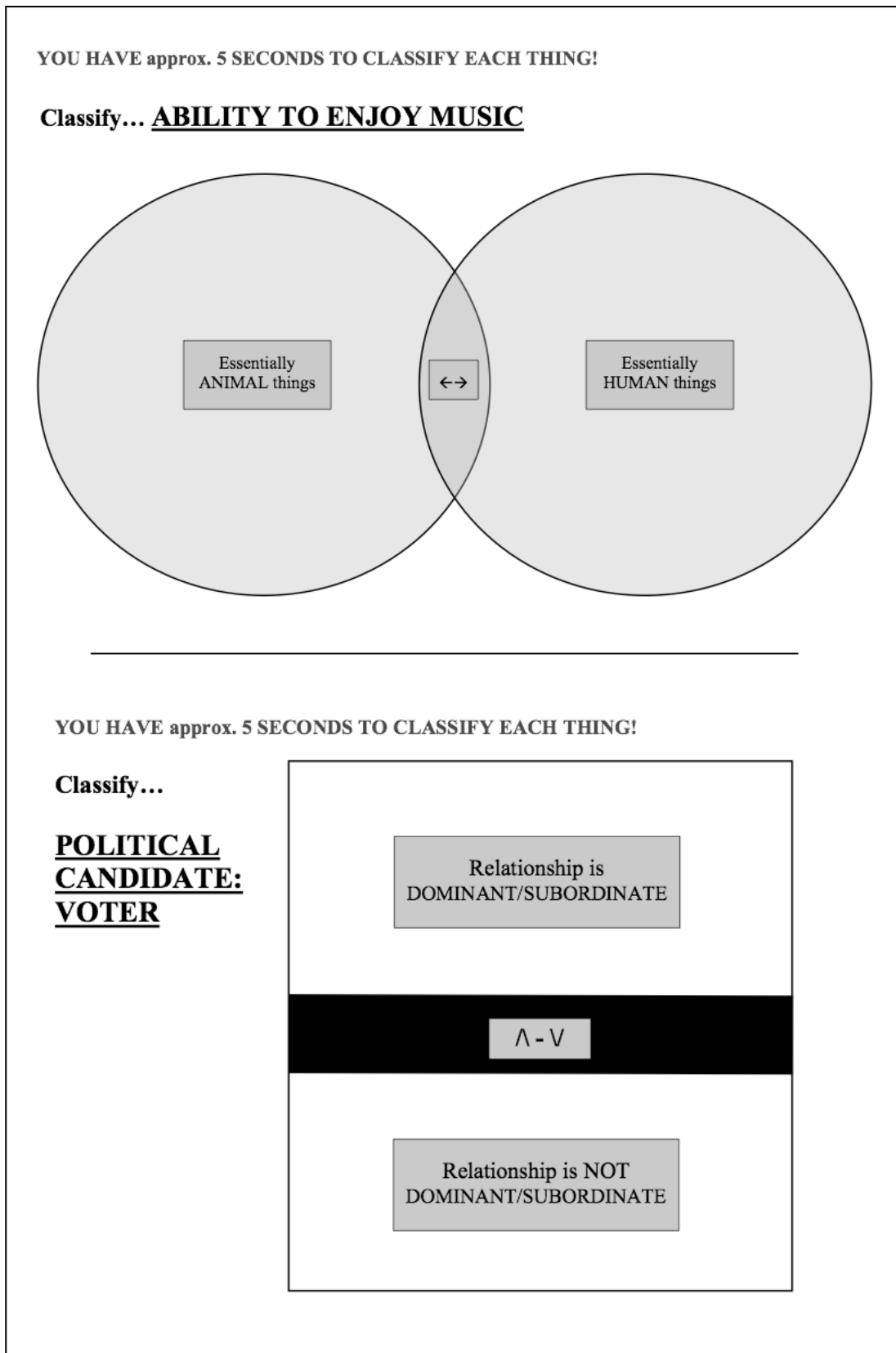
Figure 2.1, continued
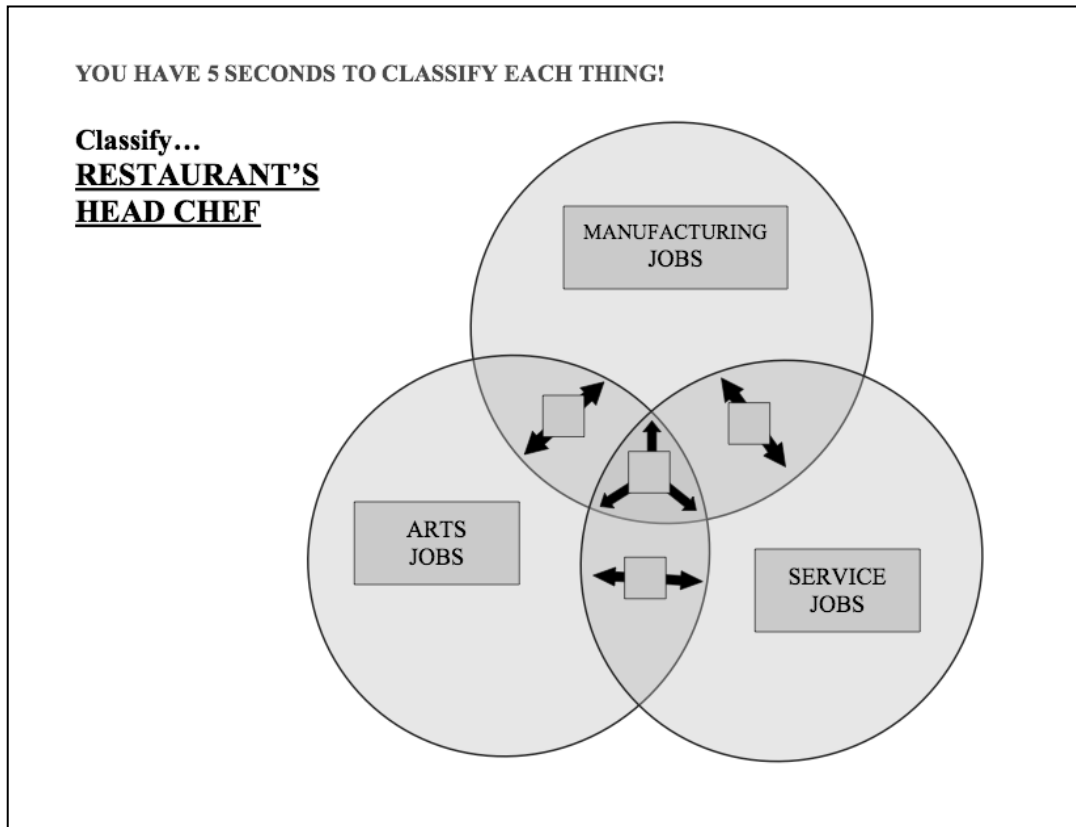
"not furniture."[2] When a subject places an object between categories, his "non-categorization" is incremented by one, resulting in a score based on the number of times a subject *declined to categorize an item.* Typically these scores are later edited by placing a cap on the maximum number of non-categorizations scored. For example, if 10 "furniture" items are presented, a subject who declined to categorize all 10 items would have his score set back from 10 to 5, on grounds that the difference between non-categorizing a lot of items (5) as opposed to all items has little theoretical significance. For most categorization tasks (furniture, appliances,

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[2] Not the same object each time, of course—the 10 objects were designed to vary in their relationship to furniture or whatever categories were given: some objects were more obviously furniture than others. No pre-test was conducted on them to verify that different objects were "generally" seen as more or less furniture. This does leave me open to the charge that a different set of objects might have produced different results: maybe "bookends" are not-furniture for conservatives and between furniture and not-furniture for liberals, whereas "park bench" (not one of my items) would have been clearly furniture for liberals but between categories for conservatives. To combat this challenge, I rely on the fact that conservatives categorized more strongly across dozens of objects and lots of different categories.

toys, cause-effect relationships), the modal response was to place every single item into a category—that is, to decline to categorize zero times.

The general procedure continued thus: after a cap was placed on the number of non-categorizations for each categorization task, a scale was constructed from the various categorization tasks measuring the "general tendency to *not* categorize." This was possible because the different categorization tasks scale together well and generate respectable alphas. This scale was typically then standardized and flipped so that *categorizing more items* was scored higher. This measure of categorization strength was then used to predict ideological opinion formation.

Figure 2.1 shows several different actual categorization items used, and table 2.3 presents an exhaustive list of every category-set (i.e., how the two categories were labeled) with every item presented for placement in those categories. Note that not every category-set was presented to every sample, and even within a sample, not every category-set was presented to every participant. The table simply gives the reader an overview of the wide variety of different category-sets and items used for categorization. I used a wide variety of category-sets, with widely varying relationships to everyday experience, with the intent of capturing categorization as a broad phenomenon, rather than one that applies, say, only to objects, or only to humans.

A perusal of items for categorization will also reveal (unless one is a fantastically strong categorizer!) that many items can at least be rationalized as having some relationship with both categories. This is, of course, intentional, as I wanted to give subjects several opportunities in each category-set to opt *not* to categorize items. Category-sets also come with items whose belonging to the category is without doubt. This was also intentional, as I felt that without obvious and clear "anchors" on either end—objects whose belonging to one category or another was without question, subjects would become suspicious that the categorization task was a "test" to see whether they "realized that none of the objects really belonged to either category." As it turned out, enough people *never* click between categories that this probably was not worth worrying about.

For the first student dataset, some nonsense items were also included for categorization, to try to minimize the probability that subjects would begin to "calibrate" their categories according to the objects they'd already placed. The nonsense items were meant to induce subjects to "cleanse" their minds with a sort of distracter task, and required subjects to determine that certain items (say, a string of nonsense characters) could not even be placed on the categorization board. However, due to the need to shorten the survey, these nonsense items were dropped after student sample 1 was surveyed.

Table 2.3. Items and category-sets for categorization tasks.
(See "essentially human/animal things" for a *hilarious* note.)
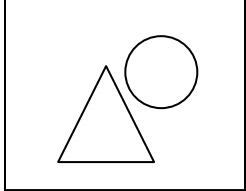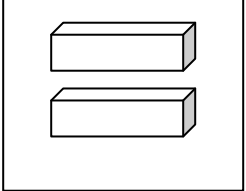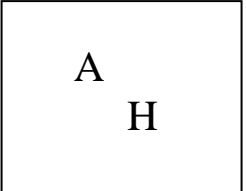
Categories in category-set	Items offered for categorization
1) Furniture 2) Not furniture	Sofa, Toilet, Area rug, bookends, countertop, coffee table, Lawn Mower, Bookshelf
1) Home appliances 2) Not home appliances	Microwave Oven, Vacuum Cleaner, Water filter, Television set, Doorbell, (drawing of) home computer, (photo of) treadmill, salad fork, chandelier, (photo of) the space shuttle, light bulb, (photo of) broom, (photo of) scissors, (photo of) tricycle, light switch, (photo of) rock, dolphin, racehorse
1) Healthy foods 2) Unhealthy foods	Spinach, broccoli, salmon, corn flakes, popcorn (no butter), pizza sauce, sirloin steak, cheddar cheese, granola, strawberries, oatmeal cookies, twinkies, cake frosting, coffee, wine,
1) An "above-below" relationship 2) Not an "above-below" relationship	Several depictions of two objects in various spatial orientations to each other. Examples:
1) Does not have consciousness 2) Has consciousness	Honeybee, chimpanzee, computer, dog, the ecosystem, human, the human race as a whole, the internet, oak tree, the stock market, a stuffed animal, your *unconscious* mind, the universe as a whole, a virus
1) Arts 2) Sciences	Ballet, analyzing the stock market, chess, computer programming, designing a winning gameplan in sports, higher mathematics, motorcycle repair, physics, sculpture

Table 2.3, continued

1) A is the CAUSE of B 2) A is NOT the CAUSE of B	Subjects categorized event-dyads:
	A: The swinging bat hits the ball B: The ball flies through the air
	A: Mentally committing to have a better attitude B: Having better things happen to you
	A: Bobby smokes pot B: Bobby spends a night in jail for drug possession
	A: The bowling ball rolls toward the pins B: The wind blows hard outside
	A: Bragging about how great you are B: People thinking you are great
	A: Band sends out lots of demos B: Band gets a lucrative recording contract
	A: Jill tries alcohol at age 12 B: Jill's friend Mary gets addicted to drugs 4 years later
	A: Greg drives while intoxicated B: Greg kills a pedestrian
	A: A fender-bender happens in Tokyo B: A fender-bender happens in Milwaukee a week later
	A: 9-year-old Craig gets glasses B: Craig's classmate picks a fight with Craig
	A: Doing a good deed B: Being the recipient of good luck
	A: Eric buys a gun for self-protection B: Eric's house is later broken into
	A: Tim gets a new, better-looking haircut B: Tim gets asked out on a date
	A: The light switch is switched to "on" B: The light comes on
	A: The plate is pushed off the table B: The plate falls to the floor
	A: Suzy wears a revealing dress B: Suzy gets pregnant
	A: Jean sneezes at a café in Paris B: The government of Burma is soon overthrown
	A: Sharon mentally commits to becoming successful B: Sharon becomes successful
	A: Hard work B: Earning an "A"
	Note: some of these items are reminiscent of the famous illustration of chaos theory, "A butterfly flaps its wings, and a hurricane halfway around the world results." I purposefully omitted this item because its familiarity to people might have influenced them to conclude that it is

	"known" that any event can be the cause of any other event, artificially inflating "A is the cause of B" categorizations.
1) Difficult tasks 2) Easy tasks	Driving in an unfamiliar city, operating an elevator, Climbing Mount Everest, recovering from an illness, earning a Ph.D. in mathematics, figuring out other people's motives, listening to horrible music, getting others to respect you
1) Relationship is DOM-INANT/SUBORDINATE 2) Relationship NOT DOMINANT/SUBORD.	Building: parking lot; political candidate: voter; employer: employee; flagpole: flag; largeness: smallness; meanness: friendliness; rider: horse; seller: buyer; public speaker: audience member; stronger: weaker; building superintendent: building tenant
1) EMOTIONAL thoughts and experiences 2) NOT EMOTIONAL thoughts and experiences	Ambition, anger, showing how a cause leads to an effect, knowing how to fix a car, noticing a traffic light has turned green, hoping for a preferred outcome, "I'm hungry", the intent to do something, physical pain, sadness, the decision whether to vote or stay home on election day
THREE categories presented at a time, from the following: 1) Angry; 2) Disgusted; 3) Suspicious; 4) Sad 5) Amused; 6) Frustrated; 7) Surprised; 8) Elated; 9) Determined; 10) Worried; 11) Bored; 12) Happy; 13) Annoyed; 14) Disappointed; 15) Hopeful; 16) Interested	Various photographs of human faces showing emotions of varying levels of ambiguity were shown, and for each face, THREE emotion categories were available. Subjects could choose to categorize the face into a single emotion, click in between two emotion categories, or click in the very center, indicating the face showed all three emotions to some extent.
1) Toys 2) Not toys	Barbie doll, baseball mitt, drill, skateboard, legos, water balloon, trampoline, lawn mower

Table 2.3, continued

1) Characteristics of a GOOD FRIEND 2) NOT characteristics of a good friend	Almost always agrees with you, feels competitive with you, helps you with tasks, tries to keep you from succeeding, is often obsessive about things, is extremely opinionated, is smarter than you, smiles all the time, steals your boyfriend or girlfriend, tells you when you don't look your best, tells you about his/her problems, is not very reliable
1) Essentially HUMAN things 2) Essentially ANIMAL things	Running on 4 legs, caring about others, having a conscious mind, having "culture" or "society", ability to enjoy music, covered with fur or feathers, playing games, designing machinery, playing a musical instrument, baring teeth, marking one's territory **Note: this was intended, like other categorization tasks, to have no relation to ideology, but apparently I was wrong. Just days before this dissertation was completed, Republican Senator Sam Brownback introduced a bill that would ban the formation of part-human, part-animal creatures! It had 18 Republican co-sponsors—and one Democrat.**
1) Behaviors that are HELPFUL 2) Behaviors that are NOT HELPFUL	Giving unsolicited advice, buying things at the mall, letting someone cheat off your test, criticizing others, holding a door open for someone, hiring someone to work for you, telling a lie, spreading mean rumors about people, volunteering, doing work for an hourly wage
1) Someone whom I identify with 2) Someone whom I don't' identify with	Someone who practices Christianity, someone who happens to be a dolphin in the ocean, someone from a foreign country, someone who hates everyone, someone who practices Islam, someone who speaks a different language, someone struggling with a mental illness, someone who likes music, someone who tries to be nice to others, someone who doesn't believe in God, someone who's from another solar system, someone in a wheelchair for life
THREE categories presented at a time: 1) Service jobs; 2) manufacturing jobs; 3) managerial jobs; 4) Arts jobs; 5) "a different job sector not shown here"	Accountant, bartender, carpentry, assembling cars for Toyota, restaurant's head chef, stand-up comedian, computer training consultant, magazine editor, wheat farmer, knitting handmade winter hats, researcher for a pharmaceutical company, airline pilot, college professor, abstract sculptor, taxi driver, toy designer for Fisher-Price

Table 2.3, continued

1) What a superior does 2) What a subordinate does	Throws caution to the wind, gets his hands dirty, is on a first-name basis with everyone, arrives late to meetings, obeys commands, shouts orders, devises a plan, gives a presentation, writes up a report, abides by rules and regulations, says "yessir"
1) Society approves 2) Society disapproves (note: this item was changed to "Morally OK" and "Not morally OK" for the Tallahassee sample.)	Breathing, parking for a few moments in the fire lane, writing graffiti, eating it in the grocery store before you pay for it, leaving a lousy tip, making fun of overweight people, telling a child Santa Claus isn't real, speeding by 10 mph, starting fights with other people, watching television
1) Tall things 2) Short things	Photographs of several buildings, trees, and furniture pieces

Finally, it should be noted that subjects were pressed for time for each item they categorized. Generally they were expected to make their choice of which category the item belonged to, or whether it belonged between categories, within five seconds (this was increased to 7 seconds for longer-worded categorization items such as "telling a child Santa Claus isn't real," without informing the participant that additional time had been granted[3]). The purpose of the time press is that I did not want to record highly deliberated evaluations of category membership. C-theory is primarily interested in how subjects tend to *perceive*, before they have had time to deliberate, the categorical or noncategorical nature of objects and relationships, and how that perception affects deliberations *downstream.*

Demographic and other routine variables

Demographic variables are conspicuously absent from analyses of the student samples; in large part, demographic data was not gathered where students were likely to be somewhat invariant. Students were not asked to give their age; as it would have been wasted time, and surveys were already quite long (up to an hour). I didn't consider student income important enough to sacrifice other questions to assess it. Educational attainment does not vary sufficiently among students. Race information was gathered, and is occasionally included as a covariate.

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[3] For event-dyads in the "A is/is not the cause of B" categorization set, subjects were told they would have time to read the item *plus* five seconds to answer, and were in fact given 10 seconds.

For the Tallahassee adult sample, as it made sense to gather more demographic data, level of education, age, and income are sometimes added to sex as control variables—typically with very little effect.

Church attendance is gathered in all samples, and acts as a proxy for religiosity, and hence is an important demographic in numerous analyses.

Political sophistication proves useful in some analyses, particularly in chapter 9, and was assessed with a short four-question political knowledge quiz to all samples.

Relationships between categorization strength and other variables

The central narrow aim, then, of the paper (narrow, that is, as opposed to the broad aim of increasing our understanding of ideological thinking) is to determine two things: (A) whether categorization strength predicts ideology in zero-order correlations or in simple regressions with sensible controls, establishing that there is *some* relationship between categorization strength and ideology; and (B) the extent to which categorization strength may influence ideology via mediating variables. This latter aim will be addressed via Sobel mediation tests and structural equation models, and then by attempting to temporarily manipulate subjects' categorization strength and look for posterior effects on their political opinion formation.

The broader method, again

Ultimately, however, the attempt to establish causal order—to show that categorization strength causes political opinion formation—met with rather unclear results. Structural equation models do not establish causal ordering—only time series analysis or experiments can do that. The experimental results are not entirely null, but they are not entirely predicted either. To combat the assertion that political ideology occupies a place causally prior to, or at least simultaneous with, perceptual categorization, I am currently forced to rely mostly on theory, and to argue that it's implausible that ideology is a cause of, or is coterminous with, perceptual categorization.

Most broadly, I will ask the reader step back with me and think about what we are seeing—what are the strong implications of this "bunch of correlations," along with some regression and structural equation modeling. Viewed as a whole, it becomes almost impossible to argue that some kind of *cognitive rigidity*—a rigidity that is perhaps not the same thing as perceptual Categorization Strength but which is surely much better understood by this new and exciting variable—is not driving people to form more conservative or liberal opinions.

Chapter 3

The dimensionality of ideological opinion formation

Of the various claims I make in casual conversation about ideology, two in particular draw the most disagreement. The first is that ideological differences between fiscal or generally non-moral ("secular") conservatives and liberals are driven by psychological differences. The more conventional belief is that to the extent the liberals and conservatives are psychologically different, it's Authoritarianism-related processes driving *moral* or "social" ideologues apart.

The second claim I make which draws strong and, among political psychologists, near-universal disagreement is that moral and secular (in casual conversation, this reduces to moral and *fiscal*) conservatives share with each other psychological similarities (and moral and secular liberals share similarities) so that, historically and into the future, we should expect that with high probability people who hold morally conservative positions will continue to be political allies of people who hold fiscally conservative positions. This is not just an accident of path dependency and the fact that I am writing at this particular moment in political history. This claim of mine is at odds with conventional wisdom both of political science academics (Miller and Schofield 2008) and of journalists and commentators (Frank 2004; Dionne 1991).

This idea that different manifestations of conservatism (and liberalism) have "eternally" gone together, actually forms a *premise* of Alford, et al.'s (2005) paper on ideological heritability. They write,

> Why is a reasonably standard left-right spectrum so widely applicable cross-culturally and over time? The universal left-right elements of belief systems around the world and over the decades is difficult for behavioralists to explain."

Alford, et al. cite no research to back up this premise. But C-theory suggests they are probably right.

To deal with either of these claims—the psychological nature of secular ideology and the psychological compatibility of multiple dimensions of ideology—we must address the dimensionality of ideology generally, and that's the subject of this chapter. I argue that the use of only two dimensions, while appropriate for some studies, obscures additional detail in the dimensional structure of ideology which is useful for understanding the broad phenomenon. In fact, even conceding the existence of three dimensions while proceeding to use "social" and "fiscal" to describe "the main components" of ideology for simplification purposes threatens to lead researchers down the wrong path. Indeed, we must be clear that some issues conventionally conceived as belonging to a "social-moral" dimension of ideology—in

particular, issues about harshness toward criminals and "nativist" attitudes about immigration and language purity *simply don't belong in the moral dimension.*

Moving beyond one dimension

Despite the conventional treatment of ideology as "liberalism" and "conservatism," a two-dimensional structure to ideology is not a new concept, and modern political psychologists mainly accept this as given. As long ago as 1939, Ferguson (1939) factor-analyzed political survey responses and found two factors, calling them "Religiosity" and "Humanitarianism," which sound a lot like moral and fiscal ideology. He later added a third, called "Nationalism," defined by support for law, censorship and patriotism, and this dimension may presage the "third"—and often psychologically most strongly determined—dimension I find in my data.

Eysenck (1954) found two factors, and leaving them unrotated called them "Tough- and tender-mindedness" and "Radicalism versus conservatism." This latter dimension included not only fiscal and militaristic elements but religious ones too. In 1974, Eysenck added a third factor, Political-Economic Conservatism-versus-socialism. So even three-dimensional structure is not a brand-new idea. However, leaving factors unrotated can make interpretation difficult, and my rotation strategy reveals a much easier-to-understand structure that doesn't lump religious, militaristic, and fiscal principles into one category.

In 1993, Boski found that Poland's electorate displayed two orthogonal dimensions of ideology—again a religious-secular one and a capitalist-socialist one, the common "fiscal" and "social" dimensions we know today—and recently (2008) Boski criticized the terminology "left-right" as "journalist language." And Duckitt (2000) has suggested that Social Dominance Orientation and Right-Wing Authoritarianism, being only modestly correlated, are the building blocks of a two-dimensional ideological structure (with near-orthogonality implied). A two-dimensional structure is also suggested by Schwartz (1996), whose 10 basic value orientations can be reduced to two dimensions, Openness to Change-versus-conservation and self-transcendence-versus-self-enhancement.

The assumption of two dimensions, and of their orthogonality, forms the basis of a 2002 study by Ashton, et al.*,* in which two orthogonal dimensions—one clearly humanitarianism-versus-something like competition, the other clearly moral and usually religious in nature—are found to exist in the United States, Canada, Wales, and Hong Kong (but not Ghana). The authors conclude that "there seem to be at least two orthogonal, simple-structured factors in the domain of political issues." Studies such as this go a long way in convincing political psychologists that the various dimensions of ideology are psychologically unrelated: the dimensions are orthogonal, after all.

However, the authors of the 2002 study use varimax rotation in their factor analysis, forcing the factors to remain orthogonal by construction, so the conclusion

of orthogonality "in the real world" is simply unwarranted based on their analysis alone. Eysenck also leaves factors uncorrelated by construction.[1]

To my frustration, my claim that the various dimensions of ideology are psychologically related seems often to be caricatured into a claim that there is only one dimension of ideology—my caricatured "claim" subsequently refuted by reference to papers which don't use oblique rotation methods and hence "find" orthogonal factors. I do not dispute the existence of multiple dimensions of ideology: data establishes beyond all doubt that a one-dimension claim is flat wrong. But I use promax rotation which allows factors to be correlated. This makes for both more interpretable factors, and a more realistic model of ideology. If dimensions of ideological thinking are truly uncorrelated, we should allow that itself to be an empirical finding. According to Jost, et al. (2009), "it should be noted that measures of liberalism and conservatism are seldom if ever truly uncorrelated."

Nonetheless, there is a stubborn thread in political science which holds ideology is not only at least two-dimensional, but that the dimensions must be orthogonal (Jost, et al., 2009, seem to concur that this assumption exists), and some research has attempted to establish it. Kerlinger (1984), based measures of liberalism and conservatism on "criterial referents," political attitude objects which belonged either to liberalism or to conservatism, but not to both. Jost et al. cite Kerlinger's efforts to measure the two ideologies as orthogonal, only to have them "remain stubbornly correlated at -0.20."

A perhaps more successful stab at establishing at least *something* orthogonal about multiple dimensions of ideology originates with Conover and Feldman (1981). They take a similar approach to Kerlinger's (1967, 1984) in regarding some political objects (groups, issues) as associated with liberals, some with conservatives. Evaluation of these objects determines people's self-identification—not the other way around. And, since evaluations of these objects are not strongly negatively correlated, liberalism and conservatism do not represent a bipolar dimension at all—they are separate and orthogonal concepts. However, as far as I can tell, Conover and Feldman are unconcerned with cognitive processes that might lie *behind* these influential evaluations of political objects, and I see no reason why an essentially bipolar cognitive process would be inconsistent with their results.

Bobbio (1997), while a powerful voice against the "end of ideologists" in his argument that left and right represent an enduring rather than a historically arbitrary distinction, nonetheless recognizes multiple dimensions of ideology and treats a left-right dimension defined by egalitarianism and hierarchy, and a liberty-authoritarianism dimension, as essentially unrelated.

Bobbio's suggestion that "individualism" motivates both the left ("social individualism") and the right ("libertarian individualism") has caused a good deal of confusion, as it's a facile argument to state that, in their pleas for religious liberty, creativity and the like, "liberals are just as individualistic as conservatives." I think

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[1] I have not been able to retrieve the correlation structure of Boski's (1993) factors. The Polish journal in which the article was printed is unavailable to me currently.

this muddies the waters with respect to what we mean by individualism as a component of economic conservative thought. The concept of individualism I use in this dissertation (which correlates positively with secular conservatism) is better known as *individual responsibility*, and it has little to do with personal freedom or liberty. It involves instead the belief that outcomes that befall individuals should be tied closely to those individuals' prior actions, whether good or bad, and particularly that justice requires bad outcomes be left bad, and good outcomes left good. Individualism by this conceptualization is not the opposite of conformity, but of redistributive collectivism—and hence belongs quite squarely on Bobbio's left-right, egalitarianism-hierarchy dimension.

I don't have, but had hoped to gather, data to indicate whether moral and secular "conservatisms" and "liberalisms" tend to "go together" in all countries for all times. That is, I had hoped to lend support to Alford et al.*'s* premise. As it happens, while I worked on this dissertation, Napier and Jost did some of the work for me (Napier and Jost 2008). They found both fiscal and social forms of conservatism associated with right-wing orientation in 19 separate countries—all the countries in the study. Additionally, Benoit and Laver (2006) have recently found social and economic dimensions of ideology positively intercorrelated in 41 of 44 nations examined. So there is at least some evidence to back up the assertion of Alford, et al.

More than two dimensions?

Here, I present evidence that we should be thinking of ideology in at least three dimensions—fiscal, moral, and a third dimension which I will call "tough- and tender-minded conservatism and liberalism," or just "tough-tender ideology." This "third" dimension consists of issue positions which typically address how benevolent or unyielding public policy should be toward "less desirable" populations— immigrants, foreign nations, criminals and so forth—while remaining differentiable from positions on more purely economic issues having to do with wealth distribution (even though "the poor" could constitute a "less desirable population" that benefits from redistribution). We simply cannot discard this third dimension or leave it to later study, seeking to understand the "two main dimensions" of fiscal and moral ideology first. Unless we wish to leave the phenomenon of ideology cloaked in mystery[2], we *need* this third dimension for a number of reasons.

First, the other two dimensions are arguably *less* central to ideology if we take ideology to be partially a psychological phenomenon: the "third" dimension, though it lacks a familiar name like "fiscal liberalism and conservatism," may in fact be best thought of as the "first dimension" of ideological thinking, and since it seems the dimension most closely related to inter-group relations, which are such a huge component of politics, perhaps this should surprise no one.

Second, some of the issues which, as factor analysis and common sense equally reveal, belong in this tough-tender dimension of ideology, are discussed at

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[2] Do not assume there are no scholars who would be happy with this outcome.

watercoolers in political science departments as though they are part of "social" ideology. For example, attitudes toward immigrants ("nativism" as its extreme-conservative position is pejoratively called) and attitudes toward the death penalty and the harshness of criminal treatment are often associated in the words of political commentators with "the religious right" or with moral issues such as prayer in schools or abortion. However, my analysis suggests *strongly* that this tough-tender dimension of ideology is much more closely related to *fiscal* ideology than to moral. I am not the only researcher to find this: Ashton, et al.'s (2005) factor-analyzed data repeatedly and cross-culturally display structure in which the moral dimension (out of two dimensions) contains *only* moral or religious issues, and not nativist, anti-crime or other outgroup-derogation-oriented attitudes. And Jacoby's (1995) factor analysis displays precisely the same structure. Apparently, "Christian Conservatives" (or "religious conservatives" in other cultures) should not be confused automatically with nativists, as they frequently are.

In other words, knowing whether a person is conservative on the tough-tender dimension gives you a good deal better chance of guessing their positions on fiscal issues than on moral issues—so unless we recognize and investigate this third dimension, we leave some common misconceptions intact at the very most basic level of how we understand ideology, threatening the validity and direction of future research.

The third reason is that, because this third dimension is more closely related to fiscal ideology, and because its relationships with psychological variables are often very clear, it is arguable that we can ultimately understand much about fiscal ideology by using tough-tender ideology as an "introduction" into the psychology of non-religious ideology. Fiscal ideology turns on issues which are more abstract, and reactions to the more concrete tough-tender issues may be more visceral, more immediate, not to mention less contaminated by popular notions about what kind of person (say, a very educated, or a very financially astute person) is or is not "fiscally conservative."[3] That is, just as we should not put too much stock in what we can learn about moral ideology from questions that belong in the tough-tender scale, we should not seek to understand fiscal ideology *without* benefit of understanding the psychology of tough- and tender-mindedness as they apply to politics.

In this chapter, I will rely on exploratory and confirmatory factor analysis. I will enter a wide range of issue-opinion questions into these analyses and seek to determine *from issue positions* the dimensional structure of ideology in my three main samples. This technique is common and has been employed numerous times in previous research (for example, Ashton, et al. 2002, Van Hiel and Mervielde 2000).

I should add, however, that I will also use common sense. If confirmatory factor analysis suggests, based on fit indices, that a three-factor solution extracted by exploratory analysis is not "significantly" superior to an extracted two-factor solution,

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[3] Sometimes, it seems, *everyone* is clambering to flash their identity card qualifying them as fiscally conservative, as if there is *anyone* out there who "favors government waste" or "loves runaway deficits."

but the three-factor solution nonetheless makes intuitive sense (i.e., one type of issue seems to be falling into factor 2, and another type of issue into factor 3), then I will consider substantive parsimony a superior decision criterion to mathematical parsimony.

After using factor analysis and discussing its results, I will create additive scales containing the issues that factor analysis placed in certain dimensions, and report Crohnbach's alphas. The issue questions used, with their actual wording, appear in table 2.1 in the previous chapter. Not all issues appeared to all student samples—the issues changed somewhat as the research program progressed.

One legitimate quibble

It is important to state before turning to factor analysis that it is entirely possible to mount a *definitional* quibble with the issues I've chosen to measure ideology. Some might say, for example, that the issues that "load" on my factor of fiscal ideology do not completely define what it is to be fiscally liberal or conservative. In most of my datasets, I do not directly ask about government size, for example. "Sure, part of fiscal conservatism is not wanting to do so much to help the poor," some might say, "but the true essence of fiscal conservatism is a preference for small government, and you don't even ask that." In only one dataset do I ask about a preference for balanced budgets versus countercyclical deficit spending—and due to its complete lack of correlation with the factor I created, it's not even included in my measure of fiscal ideology. It appears to fail utterly to differentiate liberals from conservatives. But some might claim that balanced budgets are the very essence of fiscal conservatism, and hence that this question alone in my survey differentiates fiscal liberals from conservatives!

There is no way around it: my measures of liberalism and conservatism, based on issue questions I either wrote or selected, are necessarily guided by *my view* of what liberalism and conservatism are, and it's possible that factor analysis has simply managed to extract "Young's preconceived idea of ideology's factor structure." Nonetheless, I believe almost all political scientists would agree that these questions do in fact tap conventional notions of much of what liberalism and conservatism mean, even if they do not capture *all* of the idea.

At least my research subjects agree with me about what fiscal and moral ideology are. Correlations between self-identified fiscal ideology and my indices of fiscal ideology are high and significant to many zeroes, and this is also the case with self-identified "social" ideology and moral issue questions. It is possible, though, to argue that since the issue factors I extract are largely a function of the issue questions I've included, I have constructed a measure of fiscal (and moral, and tough-tender) ideology that is not scientifically or empirically defensible as "the real thing we call fiscal ideology." To those for whom this definitional difficulty defeats the scientific validity of the entire project, I can offer only a sigh. Social science is not yet physics! Give the dimensions your own names, if you like!

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To those who more reasonably argue that there might be other aspects of fiscal ideology that I'm not measuring with my issue questions, and that the "dimension" of fiscal ideology I "discover" is actually a result of my having loaded up the survey with questions that tap the same thing, I agree this is possible. There is still much to be learned from the analysis that follows, but if this is my mistake, then I trust that the collective research enterprise will correct it.

Student Sample 2.

I begin by discussing student sample 2, because the factor structure for this sample was cleaner, and it provides a nice jumping-off point for discussion of other samples. For student sample 2, entering exploratory factor analysis were the following issues:

1. Favorability of taxing the rich to help the poor
2. Favorability toward death penalty
3. Preference for increasing or decreasing immigration
4. Attitude on more regulation on business to help environment versus its opposite
5. Preference for whole-language versus phonics-based reading instruction in schools
6. Support or opposition to gay marriage
7. Support or opposition to school vouchers
8. Support or opposition of English-only laws
9. Favorability toward a unilateral versus a multilateral foreign policy[4]
10. "Abortion is murder" versus "abortion is not murder"
11. Support for government intervention in the economy
12. Attitudes on "alternative lifestyles"
13. Support or opposition for posting the Ten Commandments in schools
14. Government should do more versus less to help the poor
15. Support or opposition to physician-assisted suicide

[4] It should be noted that of 171 subjects, only 78 answered the question on unilateralist-versus-multilateralist foreign policy. For the purposes of exploratory factor analysis in Stata9, the other subjects' answers to this item were imputed using the "impute" command in Stata, which is regression-based, in which every other issue in the analysis is used, plus self-identified fiscal, social, general, and "military" conservatism and liberalism is used in the regression. I did not use the more sophisticated method of iterative switching regression (the "ice" command) because the latter method is more cumbersome and I merely wanted to use the item as a part of a factor rather than to investigate the item on its own, and Stata9 does not ignore missing data for exploratory factor analysis, instead deleting subjects where data is missing.

16. Support for a public versus a private system of health care
17. Belief in a literalist interpretation of the Constitution versus a "living" Constitution

Performing factor analysis on these items, three eigenvalues exceed 1—the third just barely, at 1.02, suggesting something might be gained by a three-factor rather than a two-factor solution. The scree plot shown in figure 3.1 suggests the same, with the most obvious "knee" only occurring after three factors.

Figure 3.1. Scree plot for issue factor analysis, student sample 2.
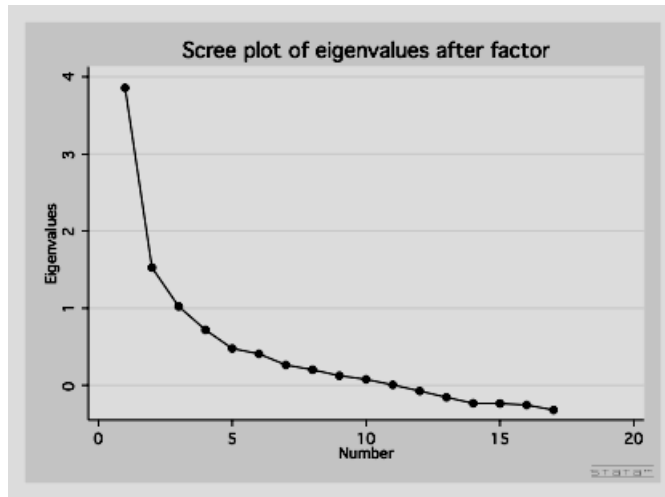
But most convincing is the result of extracting and rotating three factors using promax rotation. This leaves the loadings of table 3.1, which are easy to interpret: the first factor is, essentially, fiscal ideology. The third factor is moral ideology. And what is the second factor? Only one ostensibly "fiscal" issue loads on this factor higher than 0.3, and that issue—attitudes about pro-environment regulations on business—also loads on the first factor at 0.32. And only one single "moral" issue loads on factor 2, attitudes toward "alternative lifestyles"—and this issue loads more strongly on factor 3. Instead, we see in this second factor primarily attitudes on: the death penalty (-0.41), immigration (0.75), English-only laws (0.34), and unilateral foreign policy (0.59). This, combined with the fact that attitudes toward helping the poor nearly load at better than 0.3, suggests that this is indeed a dimension which measures one's tendency to support benevolent policy toward outgroups or undesirables. It is, in other words, tough-mindedness versus tender-mindedness as applied to policy toward groups: tough-tender ideology.

Table 3.1. Factor loadings on Promax-rotated three-factor extraction from Exploratory Factor Analysis in Stata9

Issue-question variable	Factor 1	Factor 2	Factor 3
Taxing the rich	**0.723**	0.056	-0.157
Gov't intervention in economy	**0.575**	-0.031	-0.032
Gov't helping the poor	**-0.559**	-0.283	0.012
Public-versus-private health system	**0.629**	-0.134	0.182
Immigration	-0.100	**0.746**	-0.121
Death penalty	-0.198	**-0.412**	0.064
Unilateral-versus-multilateral foreign policy	0.148	**0.588**	0.079
Environmental regulation on business	0.323	**0.455**	0.057
English-only laws	0.136	**0.341**	0.117
Abortion is / isn't murder	-0.088	0.138	**-0.728**
Ten Commandments in schools	0.098	-0.025	**0.495**
Gay marriage	-0.167	0.136	**0.680**
Alternative lifestyles	-0.032	0.307	**0.411**
Physician-assist. suicide	0.067	0.110	**-0.492**
Whole-language versus phonics reading instruction	-0.001	-0.107	0.093
School vouchers	-0.238	0.191	0.070
Literal versus flexible Constitutional interpretation	**-0.412**	-0.047	-0.096
N = 159			

The results of the analysis are so intuitively appealing that a confirmatory factor analysis is actually unnecessary and would not convince us, for example, that a two-factor concept of ideology is superior on grounds of parsimony—the difference between fiscal and tough-tender ideology is too substantively clear in the results. Moreover, confirmatory factor analysis, while often performed on the same data which has been analyzed with exploratory analysis, is not really theoretically designed for this purpose (see Muthen and Muthen website), but instead is designed to test for whether a factor structure, previously found, exists in a *new* dataset. However, I conducted confirmatory analysis in M-Plus anyway (estimated by maximum likelihood), because the additional exploration in fact makes results clearer.

In conducting confirmatory analysis, I constructed the best-fitting three-factor model I could, beginning by following the exploratory results: the Ten-Commandments, alternative lifestyles, physician-assisted suicide, gay marriage, and abortion questions loading on the moral-ideology factor; the "government intervention in the economy," "government helping the poor," "taxing the rich to help

the poor," and "public versus private health care" questions loading on the fiscal-ideology factor; and the death-penalty, environmental regulations, "government helping the poor," immigration, English-only and unilateral foreign policy questions loading on the tough-tender ideology factor.[5]

M-Plus outputs modification indices which suggested, not surprisingly, that I add two cross-loading items, alternative-lifestyles and government-helping-the-poor, to the tough-tender factor. I also modeled correlated residuals for several items—particularly unilateralism with three items, public-versus-private health, taxing the rich, and immigration. This correlation is an artifact that occurred because unilateralism was only asked of just under half the sample and was imputed by regression for over 80 subjects—feelings about unilateralism were imputed by relying on these other three items, and for this reason the inclusion of unilateralism in the factor would count as an overrepresentation of these other three items in the factor, which is corrected for by modeling the residuals. Additionally, the residuals between government-helping-the-poor and taxing-the-rich-to-help-the-poor are included in the model, which is sensible because both items mention the same target group.

The result is a three-factor model that fits the data quite well, with a comparative fit index (CFI) of 0.956 and a root mean square error of approximation (RMSEA) of 0.048. The factor loadings and their standard errors are shown in table 3.2, where for each factor one item is fixed to load at 1.0.

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[5] After entering the issue-question items, I followed Mplus's outputted suggestions of modification indices to refine the model. MPlus suggests additional cross-loadings that can be added, or correlations between residuals which can be made part of the model, for purposes of improving model fit.

I did not follow these modification indices willy-nilly simply to increase fit indices. Instead, I expanded the model only where it was sensible. That is, I added a cross-loading item to a factor only if theory or exploratory results suggested it was reasonable, and did so hesitantly since I want to keep the different dimensions of ideology as separate as possible. As for modeling correlated residuals, again I only did so where there was a clear reason why two indicators' residuals would be *expected* to be correlated. For example, if attitudes toward global warming are one indicator, while attitudes toward environmental regulation are another indicator, of, say, fiscal ideology, it's clear why there would be correlated residuals between the two: they tap the same aspect of fiscal ideology. By modeling these residuals, each of the two items makes a slightly smaller contribution to the latent variable, while other indicators' influence on the constructed latent variable increases—a desirable result since, if in a 5-item scale for fiscal ideology two entire items mention environmental concerns, one becomes worried that one's measure of ideology is dominated by attitudes on environmentalism in particular. If two indicators had correlated residuals for no reason I could discern, I did not include them in the model.

Table 3.2. Factor loadings and standard errors, confirmatory factor analysis of issue positions, student sample 2. MPlus maximum likelihood estimates.

	Estimated loading	Std. error	"Z"
Moral ideology factor			
Ten Commandments	1.000	n/a	n/a
Alternative lifestyles	0.688	0.186	3.71
Physician-assist. suicide	0.965	0.234	4.13
Gay marriage	0.892	0.166	5.37
Abortion is murder	1.568	0.295	5.32
Fiscal ideology factor			
Government intervention in economy	1.000	n/a	n/a
Gov't helping poor	0.300	0.221	1.36
Tax rich to help poor	0.916	0.162	5.66
Public or private health	1.132	0.205	5.536
Tough-tender ideology fact.			
Death penalty	1.000	n/a	n/a
Environmental regulation	1.546	0.298	5.19
Immigration	0.904	0.230	3.93
English-only laws	1.228	0.301	4.08
Unilateral foreign policy	1.133	0.232	4.88
Gov't helping poor	1.242	0.352	3.53
Alternative lifestyles	0.542	0.205	2.64
N = 164; CFI = 0.958, TLI = 0.943, RMSEA = 0.047, $\chi2$ = 92.3 (67 df, p = 0.02)			

The results are intuitively pleasing and, not surprisingly, mostly reflect the exploratory analysis. All items load significantly on their factors except for government helping the poor, which loads nearly significantly but surprisingly weakly on the fiscal ideology factor—a result of modeling the correlation between it and the taxing-the-rich-to-help-the-poor item (which reduces the influence of feelings explicitly about the poor on the fiscal-ideology factor). In turn, and partly as a result, it is perhaps not surprising that the best model fit involves two cross-loadings in which "government helping the poor" and "alternative lifestyles" load significantly on the tough-tender factor. Both of these questions contain elements not so much of abstract moral or fiscal philosophy, but of the extent to which one feels some named undesirable group should be accorded benevolent (conservatives might say "special") treatment via public policy, adding weight to the suspicion that the tough-tender dimension has much to do with treatment of outsiders.

Ideology in this sample looks three-dimensional. But it remains to be seen whether a two-dimensional model would fit the data about as well, and if so, whether issues such as English-only laws, immigration, and harshness on crime—often attributed to the "hard" right, by which commentators often also mean "Christian" right—really belong elsewhere than in the "moral ideology" dimension, where many would intuit they should. Feelings about immigration and crime are part of "social conservatism and liberalism," and not a part of "fiscal" ideology, right? As we shall see, the answer is no.

I created two confirmatory analyses based on a two-factor solution. In the first, the tough-tender dimension is simply folded into the fiscal dimension, giving us two factors, a moral-ideology factor, and a secular factor. Following sensible suggested modification indices, the best model I could arrive at fit the data more poorly than the three-factor solution, with a CFI or 0.890 and RMSEA of 0.074. Although these statistics lie outside the conventional cutoff points for "good fit," (above 0.95 and below 0.05 are generally preferred), based on the RMSEA statistics this two-factor solution is not a quantitatively *significantly* worse fit than the three-factor solution.

This bears a bit of discussion. Some may claim that the smallness of fit improvement by adding a third factor means we should simply treat ideology as two-dimensional for reasons of parsimony. I would concur but for the fact that substantively, the two secular dimensions are obviously different, with one clearly more focused on fiscal issues. What I *would* argue is that we should treat these two dimensions as closely related, in all likelihood psychologically related. They are, quite possibly, the product of the same psychology applied to two thematically separable areas of public policy.

There may well be instances when it is sensible to treat ideology as two-dimensional, but it is *not* sensible, if we do so, to treat crime and nativism as components of "social ideology," meaning a sort of "moral ideology-plus"—for when collapsing to two dimensions, these, as well as foreign policy, should be added to the fiscal, not the moral dimension. This is the answer we get when we ask, What happens when we construct two factors by relying on *conventional* thinking about what constitutes "social conservatism"? That is, what happens in a two-factor CFA when we move the death-penalty, English-only and immigration questions out of the non-moral and into the moral-ideology factor? The answer is that, while these items certainly load significantly on their new factor as shown in table 3.3, the overall model fit is simply not as good as either the three-factor model or the two-factor model in which these items are part of the secular factor. We must conclude, then, that based on a reasonable reading of exploratory and confirmatory factor analysis results, and on fit statistics calculated based on confirmatory factor analysis as well, at least for student sample 2, these tough-tender items simply should not be conceived as belonging to a dimension of conventionally understood "social-moral ideology." They are part of a separable tough-tender ideology factor strongly related to fiscal ideology.

Table 3.3. Factor loadings and standard errors, confirmatory factor analysis of issue positions, student sample 2, conventional 2-factor solution with crime and immigration attitudes part of "social ideology." MPlus ml estimates.

	Estimated loading	Std. error	"Z"
"Social" ideology factor			
Ten Commandments	1.000	n/a	n/a
Alternative lifestyles	0.849	0.196	3.74
Physician-assist. suicide	0.887	0.223	4.11
Gay marriage	0.801	0.153	5.38
Abortion is murder	1.536	0.282	5.31
Death penalty	0.364	0.158	2.30
Immigration	0.301	0.143	2.16
English-only laws	0.730	0.217	3.48
"Non-social" ideology factor			
Government intervention in economy	1.000	n/a	n/a
Gov't helping poor	1.119	0.179	6.26
Tax rich to help poor	0.970	0.157	6.19
Public or private health	1.170	0.199	5.87
Environmental regulation	0.902	0.153	5.91
Alternative lifestyles	0.099	0.123	0.81
Unilateral foreign policy	0.791	0.145	5.46
N = 164; CFI = 0.82, TLI = 0.77, RMSEA = 0.093, $\chi2$ = 171.8 (71 df, p = 0.0000)			

Construction of ideology-dimension measures. As explained in chapter 2, the measures of ideology used for the remainder of analysis in this dissertation will not be factor scores, but rather additive indices created using Stata's alpha command (except where structural equation models are employed). The procedure is to choose items that load on an ideology factor in factor analysis, standardize these items (since they do not all have the same number of response options), create an additive scale from the standardized measures, then standardize the scale itself for use in analysis. This standardized scale is then the measure of an individual's moral ideology, fiscal ideology, or tough-tender ideology, with higher scores indicating more conservatism (as conservatism is conventionally understood, i.e., more against gay marriage, more against government intervention in the economy, more anti-immigration, and so forth.)

The results of scale construction are as follows, and are summarized in table 3.4. Into the fiscal ideology scale were entered the tax-the-rich, government-intervention-in-economy, government-helping-the-poor, and public-versus-private-healthcare questions, for a good Crohnbach's α of 0.737. A question asking whether the participant favored a strict and literal interpretation of the Constitution or a flexible, "living" Constitutional interpretation loaded significantly on the fiscal ideology factor in factor analysis, but its inclusion slightly damaged alpha, and because of this and also because substantively opinions about Constitutional law are not on their face part of "fiscal ideology," this item was not included in the scale. It's worth noting, however, that such rigidity with regard to the Constitution is closely related to fiscal conservatism in this sample (r with the rest of the scale = 0.37, p = 0.0000, compared to 0.22 and 0.35 for moral and tough-tender ideology respectively, ps = 0.004 and 0.0000)—another indication that cognitive rigidity is not only a characteristic of conventionally understood "social" conservatives.

Table 3.4. Composition of additive ideology dimension scales to be used in analyses, student sample 2

Fiscal ideology consists of…	Tough-tender ideology consists of…	Moral ideology consists of…
Tax rich, redistribute to poor	Death penalty	Gay marriage
Gov't interventionism	Pro-environmental reg.	Abortion
Gov't helping the poor	Unilateral foreign policy	Alternative lifestyles
Public/private health system	English-only laws	Ten Commandments
	Immigration	Physician-assist. suicide
	Gov't helping the poor	
α = 0.737	α = 0.719	α = 0.722

Into the moral ideology scale went the gay marriage, abortion, alternative-lifestyles, Ten Commandments, and physician-assisted suicide questions. α for this scale is 0.722.

Into the tough-tender ideology scale went the death-penalty, environmental-regulation, unilateral-versus-multilateral-foreign-policy, English-only-laws, and government-helping-the-poor questions, for an α of 0.719.

Note that in tough-tender ideology I have included the cross-loaded "government-helping-the-poor" item from the fiscal-ideology scale, but have not included the "alternative lifestyles" question from the moral-ideology scale. This, even though the inclusion of "alternative lifestyles" would have *increased* alpha marginally, to 0.727. Why? Some choices have to be made. I included one cross-loading item and not the other because in factor analysis, government-helping-the-

poor loaded on the tough-tender dimension a good deal more strongly than alternative-lifestyles did. Additionally, I've established that in student sample 2 the tough-tender and fiscal dimensions are closely related, so cross-contamination is more intuitively acceptable between these two dimensions.

Why then do I include government-helping-the-poor in the fiscal dimension when it loads so weakly there? On substantive qualitative grounds, of course. The extent to which government helps the poor is potentially the central issue in fiscal ideology, and the item's merely moderately loading on an extracted fiscal-ideology factor does not change this fact. The item belongs in a scale of fiscal ideology, plainly. However, in general, I would prefer to keep the dimensions as separate as possible so as to differentiate psychological variables' effects on one dimension or another, hence the deletion of "alternative-lifestyles" from the tough-tender scale.

The question about environmental regulations could have been included in the fiscal-ideology scale, but was only included in the tough-tender scale. This decision could easily have gone the other way, but the item correlates more strongly with the tough-tender factor than with the fiscal, and is not entirely a matter of fiscal ideology; indeed, it's likely that the item's wording taps feelings about the environment more than feelings about business, so that tough-mindedness more than an abstract, economics-based anti-regulatory bias is what drives people to prefer less environmental regulation. In fact, I think it's highly illuminating that this item relates so closely, and unexpectedly, to tough-mindedness—and this isn't the only time we'll see it. "The environment" is not an outgroup, but it is easy to understand how saving or helping the environment might strike tough-minded conservatives as an extremely "distant" concern from the everyday, nuts-and-bolts things government ought to be doing.

The intercorrelations of the constructed additive scales from student sample 2 are shown in table 3.5. All dimensions of ideology significantly intercorrelate, but the important thing to notice is that fiscal and tough-tender ideology are more closely related than either is to moral ideology, which again violates some conventional thinking about what constitutes "social conservatism and liberalism." Nor is this the result of the inclusion in both the fiscal- and tough-tender-ideology scales of the "government helping the poor" item. When that item is removed from the tough-tender scale, the correlation of 0.48 between the resulting tough-tender scale and fiscal ideology is still considerably larger than that of any correlation with moral ideology.

In sum, then, after conducting exploratory and confirmatory factor analysis, and creating the scales which will be used for most of the following analyses, student sample 2 yields an easy-to-see three dimensions of ideology, a fiscal, a tough-tender and a moral, with the first two clearly more closely related.

Table 3.5. Intercorrelations of scales measuring ideological dimensions by issue position, student sample two.

	Fiscal ideology	Tough-tender ideology	Moral ideology	Tough-tender, govt helping the poor excluded
Fiscal ideology	1.0			
Tough-tender ideology	0.59 (0.0000)	1.0		
Moral ideology	0.24 (0.002)	0.29 (0.0001)	1.0	
Tough-tender ideology, "government helping the poor" excluded	0.48 (0.0000)	0.976 (0.0000)	0.29 (0.0002)	1.0
p - values in parentheses				

Student sample 1

Into exploratory factor analysis for student sample 1 went the following items:

1. Public versus private health system
2. Government helping the poor
3. Government intervention in the economy
4. Pro-environment regulation on business
5. Whether global warming is an urgent problem
6. Taxation of rich to help poor
7. Approval of the Iraq war
8. Support for Israel versus support for Palestinians
9. Support for sustaining military spending even in hard economic times
10. Unilateral versus multilateral foreign policy
11. Support for death penalty
12. Alternative lifestyles
13. Abortion is or isn't murder
14. Gay marriage
15. English-only laws
16. Immigration
17. Ten Commandments in public schools

Only two eigenvalues were greater than one, and the third was 0.68. This fact, and the scree plot of figure 3.2, with a clear knee at the third node, suggest a *two-factor* solution. A promax-rotated two-factor solution is shown in table 3.6, with the first factor clearly a secular ideology, and the second factor moral. As with student sample 2 and the previous research cited, note that ideological thinking on some conventionally conceived "social" issues—immigration, death penalty, English-only laws—appears more related to thinking on fiscal issues than on moral issues. The shaded cells help to clarify what appear to be the main two dimensions.

Figure 3.2. Scree plot for issue factor analysis, student sample 1.
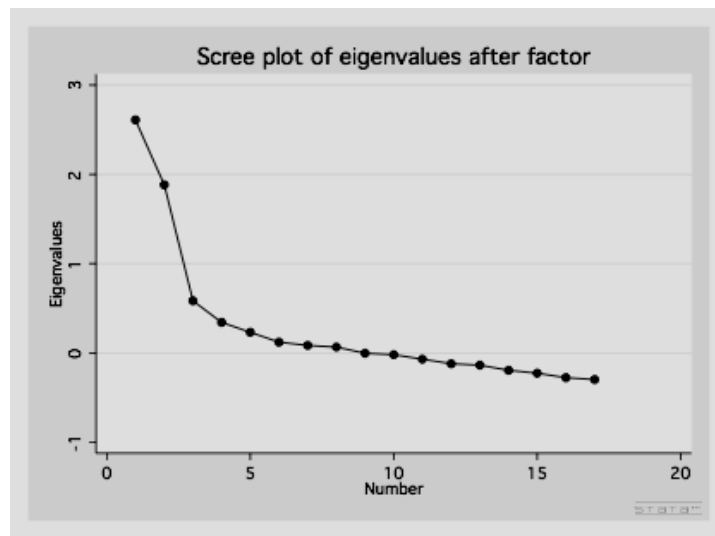
We could justifiably stop here and treat ideology as two-dimensional for the first student sample. However, a three-factor solution, after rotation, is substantively meaningful.

Rotated factor loadings are shown in table 3.7. Neither of the first *two* factors—the two factors which explain the most variance—is recognizable as moral ideology. Plainly, the first factor is fiscal ideology, with questions of public-versus-private health insurance, taxation, and helping the poor defining it (along with environmental concerns, a slight difference from student sample 2, where environmentalism was indeed related to fiscal ideology, but more strongly to tough-tender). Shadings help to identify the strongest-loading factors.

Table 3.6. Promax-rotated factor loadings for secular and moral ideology factors, student sample 1

Issue	Factor 1 loading ("secular ideology")	Factor 2 loading ("moral ideology")
Public versus private healthcare	0.52	-0.04
Government should do more/less to help poor	0.58	-0.05
Government intervention in economy	0.35	-0.16
Business regulations to help the environment	0.56	0.02
Global warming	0.51	0.03
Tax rich to redistribute to poor	0.69	-0.11
Iraq war was good or bad idea	0.51	0.06
Israel or Palestinians more in the right	0.19	0.02
Must maintain military strength no matter what	0.60	0.07
Foreign policy uni- versus multi-lateralism	0.37	0.07
Death penalty	0.39	0.06
Alternative lifestyles	0.06	0.61
Abortion is/is not murder	-0.06	0.73
Gay marriage	-0.02	0.74
Ten Commandments/prayer in public schools	-0.02	0.65
English-only laws	0.38	0.11
More versus less immigration	0.23	-0.03

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

The second factor looks a good deal like tough-minded ideology, but seems to reflect militarism, as it is most strongly defined by questions of military strength, favoritism toward the Iraq war, and unilateral versus multilateral foreign policy. Opinion about the death penalty loads on this factor too, however. This factor, which I will continue in use throughout the analysis, I henceforth refer to as tough-tender$_{\text{military}}$ ideology. But it must be considered that its military flavor may simply be a function of the presence in the survey of three questions which are absent for student sample 2—those about military strength, the Iraq war, and Israeli-Palestinian relations.

The third (and least variance-explaining) factor is clearly, again, moral ideology, with all four moral issues loading heavily on it and not on the first two factors. A two-factor solution certainly seems substantively unsatisfying compared to this intuitively pleasing result, regardless of what any scree plot might tell us.

Table 3.7. Promax-rotated factor loadings for what appear to be fiscal, militaristic, and moral ideology factors, student sample 1

Issue	Factor 1 (fiscal)	Factor 2 (militaristic)	Factor 3 (moral)
Public versus private healthcare	0.55	-0.02	-0.00
Government should do more/less to help poor	0.65	0.03	0.00
Government intervention in economy	0.47	0.11	-0.11
Business regulations to help the environment	0.50	-0.12	0.04
Global warming	0.49	-0.07	0.06
Tax rich to redistribute to poor	0.57	-0.20	-0.09
Iraq war was good or bad idea	-0.02	0.66	0.02
Israel or Palestinians more in the right	0.10	0.37	0.03
Must maintain military strength no matter what	-0.14	0.62	-0.01
Foreign policy uni- versus multi-lateralism	-0.14	0.31	-0.04
Death penalty	-0.14	0.34	-0.03
Alternative lifestyles	0.21	0.17	0.65
Abortion is/is not murder	-0.10	-0.05	0.72
Gay marriage	0.00	0.02	0.74
Ten Commandments/prayer in public schools	-0.11	-0.13	0.63
English-only laws	0.26	-0.19	0.11
More versus less immigration	-0.05	0.24	0.06

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

I wish to pursue this matter a bit further, though, as the two questions related to immigration—English-only laws and immigration—don't load at greater than 0.3 on any of the three factors. However, if a four-factor solution is extracted, they do mainly define that fourth factor, as shown in table 3.8. This fourth factor explains a good deal of variance that the military factor previously explained, and so this military factor is now "demoted" to the third "strongest" factor, making moral ideology the second factor. Note that now, the death-penalty item loads about as strongly on this fourth factor as on the third, military, factor.

This fourth factor, then, looks like a related facet of the "tough-tender" dimension, and I henceforth call it tough-tender$_{nativism}$ ideology. For purposes of analysis, sometimes I will combine these two tough-tender factors from student sample 1 into a general tough-tender factor, and at other times I will analyze them separately.

Table 3.8. Promax-rotated factor loadings for four-factor extraction, student sample 1

Issue	Fac.1 (fiscal)	Fac. 2 (moral)	Fac. 3 (military)	Fac. 4 (nativism)
Public versus private healthcare	0.54	-0.00	-0.01	0.05
Government should do more/less to help poor	0.59	-0.01	0.05	0.20
Government intervention in economy	0.51	-0.09	0.08	-0.17
Business regulations to help the environment	0.52	0.05	-0.13	-0.04
Global warming	0.49	0.06	-0.07	0.02
Tax rich to redistribute to poor	0.59	-0.07	-0.21	-0.03
Iraq war was good or bad idea	-0.04	0.01	0.64	-0.07
Israel or Palestinians more in the right	0.04	0.01	0.39	0.12
Must maintain military strength no matter what	-0.13	-0.01	0.59	-0.15
Foreign policy uni- versus multi-lateralism	-0.19	-0.06	0.33	0.09
Death penalty	-0.09	-0.01	0.29	-0.27
Alternative lifestyles	0.16	0.63	0.19	0.13
Abortion is/is not murder	-0.05	0.73	-0.07	-0.14
Gay marriage	-0.03	0.73	0.03	0.10
Ten Commandments/prayer in public schools	-0.09	0.64	-0.14	-0.07
English-only laws	0.14	0.07	-0.12	0.45
More versus less immigration	-0.06	-0.10	-0.17	0.44

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

Whatever scales I use in analysis, the important thing here is that, once again, exploratory factor analysis suggests that ideology can profitably be thought of as more than two-dimensional, where there is fiscal ideology, moral ideology, and then a separate group of questions which seem to tap feelings of harshness, militarism, tough-mindedness—and which are more closely related to fiscal ideology than to moral ideology, despite much conventional thinking. In table 3.9, we see correlations between the four factors scored by Stata immediately post-factor analysis. Although the two tough-tender dimensions correlate only at 0.3—just slightly more strongly than either does with moral ideology—both correlate strongly with fiscal ideology.

Additive, standardized scales were created for these four dimensions (and additionally for a combined military / tough-minded dimension). Into the fiscal ideology scale went public-versus-private health care, government help for the poor, government interventionism, pro-environment regulation, and the urgency of global warming. The scale's α is 0.66.

Table 3.9. Intercorrelations of 4 factors extracted from student sample 1—factor scores used

	Fiscal	Moral	Militaristic	Nativism
Fiscal	1			
Moral	0.19 (0.0042)	1		
Militaristic	0.59 (0.0000)	0.28 (0.0001)	1	
Nativism	0.43 (0.0000)	0.24 (0.0006)	0.30 (0.0000)	1

p – **values in parentheses. Significance tests one-tailed.**

Into the tough-tender$_{military}$ scale went the military-strength, Iraq, Israel / Palestinian relations, unilateralism, and death penalty questions. Alpha was 0.61. Into the related tough-tender$_{nativism}$ scale went English-only laws, immigration, and, again, the death-penalty question. Alpha was a mediocre 0.47. Alpha for the full tough-mindedness scale was 0.62. Into the moral ideology scale went the four moral issues, with a robust alpha of 0.79. This is all summarized in table 3.10

Table 3.10. Composition of additive ideology dimension scales to be used in analyses, student sample 1

Fiscal ideology consists of…	Tough-tender$_{military}$ ideology consists of…	Tough-tender$_{nativism}$ ideology consists of…	Moral ideology consists of…
Tax rich, redistribute to poor	Military strength	English-Only laws	Gay marriage
Gov't interventionism	Iraq war support	Immigration	Abortion
Gov't helping the poor	Unilateral foreign policy	Death Penalty	Alternative lifestyles
Public/private health system	Israeli-Palestinian relations		Ten Commandments
Pro-environmental reg.	Death penalty		
Urgency of global warming			
$\alpha = 0.66$	$\alpha = 0.61$	$\alpha = 0.47$	$\alpha = 0.79$

As with the scored factors, the additive scales' intercorrelations reflect that tough-minded ideology is more closely related to fiscal ideology than to moral ideology, with the fiscal-tough-tender$_{military}$ and fiscal-tough-tender$_{nativism}$ correlations coming in at 0.36 and 0.30, $p = 0.0000$, while the fiscal-moral ideology correlation is a scant 0.13, $p = 0.06$ two-tailed. All intercorrelations between constructed additive scales of ideological dimension are shown in table 3.11.

Table 3.11. Intercorrelations of additive ideology scales, student sample 1

	Fiscal	Moral	Tough-tender$_{military}$	Tough-Tender$_{nativism}$	Military + Nativistic
Fiscal	1				
Moral	0.13 (0.033)	1			
Militaristic	0.37 (0.0000)	0.15 (0.018)	1		
Nativism	0.31 (0.0000)	0.14 (0.03)	0.48 (0.0000)	1	
Military + Nativistic	0.39 (0.0000)	0.17 (0.012)	0.92 (0.0000)	0.75 (0.0000)	1

p – values in parentheses. Significance tests one-tailed.

I repeated the CFA procedure that was conducted on student sample 2, and the result was that there was hardly any difference between a 4- and a 3-factor solution for ideological dimensions in student sample 1. The CFI and RMSEA for the four-factor solution of fiscal, moral, tough-tender$_{military}$ and tough-tender$_{nativism}$ dimensions were 0.973 and 0.028, both indicative of good fit. For a three-factor solution in which the tough-tender dimensions are combined, the statistics were 0.978 and 0.028, again indicative of a fit almost exactly as good.

A two-factor solution in which all secular ideological issues are thrown into one dimension also fit the data acceptably well, CFI = 0.955 and RMSEA = 0.036, not as tight a fit as the 3- and 4-factor solutions, but not significantly worse (statistically, by RMSEA) and enough to give confidence that, while breaking the ideological dimensionality into 3 or 4 dimensions is likely to be illuminating, some analyses of the data as two-dimensional are defensible on statistical grounds.

However, a two-factor solution in which we follow "conventional" thinking in moving the nativist and death-penalty questions—that is, the contents of the tough-tender$_{nativism}$ scale—into the moral ideology scale is, while not a terrible fit to the data,

nonetheless clearly worse and misses conventional levels of acceptable fit, CFI = 0.90, RMSEA = 0.053.

In sum, the results of factor analysis for student sample 1 are less clean than for student sample 2, however, at least three, and perhaps four, dimensions of ideology were discernible: a moral dimension, a fiscal dimension, and something else which appears to evince something of a theme, and to this author's eyes that theme is a desire to see government adopt tough-minded or harsh policies toward less-favored entities—aliens, foreign nations, criminals. And, as with student sample 2, it is clear that the thinking of subjects in student sample 1 regarding tough-tender issues was related, yes, to their thinking on moral issues—indeed, this toughness dimension appears in both samples to act as something of a middle-dimension, tapping aspects both of moral and of fiscal ideology—but thinking about tough-minded issues lies a good deal "closer" to thinking about economic issues. Again, moral ideology is the odd-man-out. Your author continues to thank goodness he did not follow one academic's advice to "focus mainly on social ideology," for, as we'll see, I'd be writing up relatively far more null findings.

Tallahassee Adult Sample

Into the Tallahassee sample analysis went the following issue-position questions:

1. Gay marriage
2. Abortion is murder
3. Alternative lifestyles
4. Ten Commandments
5. Physician-assisted suicide
6. Preference for strict interpretation of constitution versus "living" constitution
7. Taxing the rich
8. Affirmative action / racial preferences in hiring
9. School vouchers
10. Income tax fairness
11. Government intervention in the economy
12. Government helping the poor
13. Public versus private health system
14. Pro-environment regulations
15. Death penalty
16. Immigration
17. English-only laws
18. Unilateral foreign policy

Exploratory factor analysis in Stata again yields eigenvalues (only two eigenvalues exceed 1, and the third is 0.82) suggesting a two-factor structure to

ideology. The scree plot, shown in figure 3.3 has a sharp elbow after just one node, which suggests possibly even a one-factor solution.

Figure 3.3. Scree plot for issue factor analysis, Tallahassee adult sample.
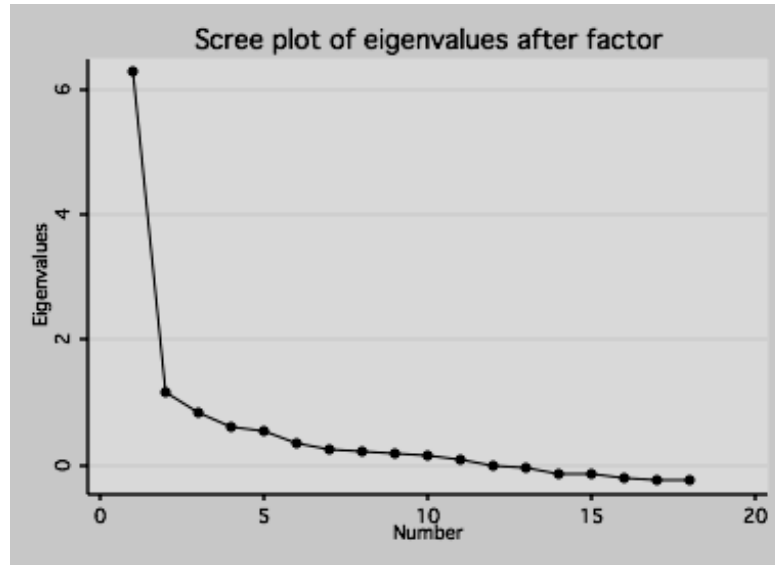
But if we extract two factors from Stata's exploratory analysis and rotate them using promax rotation, a simple and intuitive structure emerges as shown in table 3.12. The first factor is, simply, moral ideology. There are three issues that load above 0.3 on this factor which are not obviously moral in nature. The first is a preference for strict adherence to the Constitution, which does carry a pseudo-religious implication: the conservative position on both moral and Constitutional issues requires a desire for textual fundamentalism. The second is pro-environment regulations on business. This is a mild surprise, but hints at the strong relationship between moral and other dimensions of ideology which exists in this southern sample but not in northern samples. Another hint at this close relationship is that unilateralism in foreign policy loads about equally, and significantly, on both dimensions (about 0.4 for each). It is worth adding, perhaps, that in casual conversation with moral conservatives in my hometown of Tallahassee I have discerned a distinct concern with national security, which might be reflected in this result.

All the other issues load on the second factor more strongly than the first, and all load above 0.3 except for school vouchers, which seems an ideologically remote issue for most citizens, never loading strongly on any ideological factor in any sample. Here, this issue, which carries both religious and economic overtones, loads about equally (and weakly) on both factors.

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Table 3.12. Promax-rotated factor loadings for two extracted ideology factors, Tallahassee sample

Issue	Factor 1 loading (moral)	Factor 2 loading (secular)
Gay marriage	0.82	0.05
Abortion is/is not murder	0.85	-0.12
Alternative lifestyles	0.81	0.06
Ten Commandments/prayer in schools	0.54	0.16
Physician-assisted suicide	0.59	-0.13
Constitutional literalism/contextualism	0.40	0.21
Tax rich, redistribute to poor	0.21	0.37
Preferences for minorities in hiring (no literal reference to "affirmative action")	-0.14	0.57
School vouchers	0.22	0.26
Fairness of income tax	0.12	0.66
Government intervention in economy	-0.05	0.44
Government doing enough to help poor	0.03	0.78
Public versus private health care	0.08	0.53
Regulations to help environment	0.47	0.26
Death penalty	0.04	0.57
Immigration	-0.14	0.59
English-only laws	0.13	0.53
Foreign policy uni-/multilateralism (half of subjects imputed)	0.40	0.41

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

Another thing to consider regarding the Tallahassee sample is that these two factors, moral and non-moral, are very, very highly correlated. When additive scales are created, one for moral ideology and one for secular ideology, they correlate at $r = 0.62$, $p = 0.0000$, a far higher correlation than moral ideology has with any other dimension in any other sample in my datasets. This means that it's difficult enough to separate moral ideology from anything else, so separating fiscal from tough-tender ideology in the Tallahassee sample promises to be a difficult proposition. At least we can say with a good deal of confidence that the tough-tender issues, harshness on crime and on immigrants, and unilateralism in foreign policy, are strongly related to economic issues and, except for unilateralism, less strongly related to moral ideology.

This doesn't mean, however, that there's no evidence whatsoever for a difference between fiscal and tough-tender ideology in Tallahassee. Exploratory factor analysis on all the *non-moral* issues (considering Constitutional literalism a moral issue), yields the promax-rotated two-factor solution shown in table 3.13.

Table 3.13. Promax-rotated factor loadings for two extracted *secular* ideology factors, Tallahassee sample

Issue	Factor 1 loading (fiscal emphasis)	Factor 2 loading (tough-tender emphasis)
Tax rich, redistribute to poor	0.50	0.07
Preferences for minorities in hiring (no literal reference to "affirmative action")	0.12	0.43
School vouchers	0.33	0.15
Fairness of income tax	0.59	0.25
Government intervention in economy	0.61	0.18
Government doing enough to help poor	0.41	0.49
Public versus private health care	0.56	0.10
Regulations to help environment	0.70	0.02
Death penalty	0.08	0.60
Immigration	0.02	0.59
English-only laws	0.01	0.68
Foreign policy uni-/multilateralism (half of subjects imputed)	0.53	0.28

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

It is easy to see that the first factor is economic ideology: it is dominated by feelings about taxation (taxing the rich and the fairness of the income tax), regulation (the environmental question, government interventionism), and the public-versus-private healthcare issue. The only surprise here is that unilateralism in foreign policy loads strongly on this factor, but we should remember that, as with other samples, half the answers to this question are imputed from answers on other questions. The second factor has an unmistakably higher emphasis on tough- and tender-mindedness toward groups. Affirmative action is potentially an economic issue, but given its inclusion in this factor which otherwise contains feelings about immigrants and the death penalty, opinion about affirmative action is surely driven by ingroup/outgroup considerations here. It is perhaps mildly surprising that support for government's helping the poor loads slightly more strongly on this second factor than on the first, but this is nothing new in light of the northern samples. We have already seen that this issue, which taps both economic philosophy and outgroup derogation, can load strongly on both a fiscal and a tough-tender dimension of ideology. It is clear, then, that in Tallahassee, the secular dimension of ideology does indeed break down into fiscal and a tough-minded subfacets.

We would have had some difficulty finding this to be the case, however, in a three-factor extraction and rotation, which is shown in table 3.14.

Table 3.14. Promax-rotated factor loadings for three-factor extraction, Tallahassee

Issue	Factor 1	Factor 2	Factor 3
Gay marriage	0.82	0.25	0.12
Abortion is/is not murder	0.78	0.07	0.10
Alternative lifestyles	0.79	0.16	0.24
Ten Commandments/prayer in schools	0.59	0.38	-0.01
Physician-assisted suicide	0.52	0.02	0.04
Constitutional literalism/contextualism	0.45	0.15	0.30
Tax rich, redistribute to poor	0.31	0.13	0.49
Preferences for minorities in hiring (no literal reference to "affirmative action")	0.07	0.46	0.23
School vouchers	0.30	0.25	0.17
Fairness of income tax	0.34	0.41	0.53
Government intervention in economy	0.07	0.02	0.63
Government doing enough to help poor	0.30	0.58	0.47
Public versus private health care	0.25	0.29	0.48
Regulations to help environment	0.52	0.12	0.45
Death penalty	0.26	0.61	0.10
Immigration	0.09	0.55	0.14
English-only laws	0.33	0.63	0.05
Foreign policy uni-/multilateralism (half of subjects imputed)	0.53	0.36	0.34

Note: loadings flipped so that each item loads *positively* with the factor of which it is strongest member.

Here again, the first factor is clearly moral ideology. However, the intertwining of this strongest of factors (which was the weakest, recall, in northern samples) with certain other issues from the universe of non-moral opinion confuses things. For example, favoring English-only laws, while making for the central issue of the second factor, is still a significant part of the moral-ideology factor. Still, even a three factor extraction yields an intuitively meaningful structure. It appears fairly obvious that the second factor is tough-tender ideology, dominated as it is by feelings on the death penalty, both immigrant-related issues, and feelings about the poor and affirmative action. The third dimension, the one which purely quantitative analysis suggests we shouldn't even consider, unquestionably contains a more purely fiscal flavor.[6]

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[6] One interesting mark of the unidimensional character of the Tallahassee sample is that, in extracting and rotating three factors, only a single item is not positively correlated with all three factors—conservative answers to the Ten Commandments item are correlated conservatism on the "fiscal" dimension at r = -0.01. This was certainly not the case with other samples.

The results of confirmatory factor analysis in M-Plus using maximum likelihood, slightly surprisingly, suggest a three-factor solution is superior to a two-factor. The best fit I could achieve for a two-factor solution yielded CFI = 0.85, RMSEA = 0.092, not quite satisfactory. A three-factor solution, however, with a moral, a fiscal, and a tough-tender dimension yielded CFI = 0.91, RMSEA = 0.066, not quite ideal, but better. For this three-factor solution, there are some notable cross-loadings. Government helping the poor resides in both the fiscal and the tough-tender factors, while environmental regulations resides in both the fiscal and the moral dimensions. Meanwhile, to attain the best fit, favoring unilateral foreign policy was included not in the tough-tender dimension where it resides for the other two samples, but in the moral dimension.

In sum, the Tallahassee Sample looks different from the other samples—but not so different that we are unjustified in treating ideology as having those same three dimensions. In constructing additive scales, we face a decision about what to do with unilateralism in foreign policy. First, half the participants had their scores on this variable imputed. Second, in a two-factor, moral-versus-non-moral analysis, unilateralism loads slightly more strongly on the non-moral factor. In a three-factor solution, unilateralism's variance is split between the two non-moral factors and hence loads most strongly on the moral factor. When the non-imputed measure is used in additive scales (that is, it's used only when the participant has a score on it) it increases Crohnbach's α for any of the three scales—moral, tough-tender or fiscal ideology. Although I wish to avoid cross-loadings where possible, this issue seems to defy attempts to assign it to a dimension in the Tallahassee sample, and so it is included in all three scales.

Table 3.15 summarizes the additive scales created. The Tallahassee sample, then, yields a scale of moral conservatism including gay marriage, abortion, alternative lifestyles, Ten Commandments, physician-assisted suicide, Constitutional literalism, and foreign policy unilateralism, for a Crohnbach's α of 0.83. The fiscal dimension includes taxing the rich to help the poor, government intervention in the economy, the fairness of income tax, government helping the poor, public versus private health care, pro-environment regulation on business, and foreign policy unilateralism, for a Crohnbach's α of 0.82. The tough-tender dimension includes the death penalty, immigration, English-only laws, government helping the poor, and unilateralism, for an α of 0.76. For the Tallahassee sample, the intercorrelations of these factors are extremely strong. $r_{moral-fiscal}$ is 0.62, $r_{moral-tough}$ is 0.57 and $r_{fiscal-tough}$ is 0.68. At first it appears that again the strongest correlation is between the fiscal and the tough-minded dimensions, but we cannot make this claim based on the Tallahassee sample because this is partly an artifact of the inclusion of government-helping-the-poor in both the nonmoral factors. If government-helping-the-poor is removed from the fiscal dimension, the fiscal and tough-minded factors correlate slightly more weakly than the fiscal and moral dimensions do (0.56 as opposed to 0.57). In other words, the three dimensions essentially intercorrelate at the same strength in this sample. (In fact, when we test the correlations of scored factors from a three-factor extraction, each correlation is precisely 0.58, and they are *not* equal by construction.)

Table 3.15. Composition of additive ideology dimension scales to be used in analyses, Tallahassee adult sample

Fiscal ideology consists of…	Tough-tender ideology consists of…	Moral ideology consists of…
Tax rich, redistribute to poor	Death Penalty	Gay marriage
Gov't interventionism	Immigration	Abortion
Gov't helping the poor	English-only laws	Alternative lifestyles
Public/private health system	Gov't helping the poor	Ten Commandments
Pro-environmental reg.	Unilateral foreign policy	Physician-asst. suicide
Fairness of income tax		Constitutional literalism
Unilateral foreign policy		Unilateral foreign policy
α = 0.82	α = 0.76	α = 0.83

In sum, then, we should accept that this particular dataset, if it is representative of the southern U.S. generally (a tenuous suggestion, admittedly), implies two things about the South: (1) ideology in the South is much closer to being one-dimensional, although we can still find the three familiar dimensions, and (2) moral ideology in the South is more tough-minded. That is, moral ideology in the South probably does have a different character than that of the north, and this might be the source of the conventional wisdom in which hard-line attitudes about crime and nativism are assumed to be part of "social conservatism" as apart from fiscal. Foreign policy unilateralism is a strong part of moral conservatism in the South (although we have to allow that this might also be attributable to the popularity, and unilateralism, of President George W. Bush, who made a show of being Texan). Southern moral conservatives are surprisingly hostile to the environment according to this data. And they think in rigid terms about the Constitution—a possible religious effect, but also a likely effect of rigid and categorical thinking. In sum, we should expect the psychological forces of cognitive rigidity, which we will find to be strongest among non-moral conservatives in the north, to be strong among moral conservatives from the South—perhaps as strong as among other, non-moral conservatives.

Additional evidence on dimensionality

In a later phase of this research project, also conducted using Stony Brook students, an experiment was performed, to be discussed in chapter 10. As part of this experiment, however, many of the same issue-position questions used for the previous three samples were also used, along with some additional issue-position questions.

Can we discern a three-dimensional factor structure among this later sample? Yes, and it mostly resembles the fiscal, tough-tender, and moral ideology structure I will primarily work with for the remainder of this dissertation. Into the analysis went questions about the fairness of income tax; government intervention in the economy; taxing the rich to redistribute money to the poor; foreign-policy unilateralism; whether the government has an obligation to see to it that everyone has a good job; whether "society" has an obligation to deal with poverty "through government"; whether a public or private health care system is best; whether government should generally help people by expanding access to services such as education, food assistance, health care, and so forth; the death penalty; general attitudes about harshness on crime; English-only laws; increasing versus slowing down immigration; whether military spending should remain robust even in tough economic times; whether criminals are essentially "like us" and hence in need of rehabilitation, or are essentially "unlike law-abiding citizens" and hence deserving harsh punishment; gay marriage; posting the Ten Commandments; approval of alternative lifestyles; abortion; official school prayers; and physician-assisted suicide.

This large list of issues was factor-analyzed in Stata and the result was three eigenvalues greater than 1, suggesting a three-factor description of the data. Promax rotation revealed three factors with loadings shown in table 3.16, where the outlines of the three-dimensional structure are visible again. The first dimension is obviously fiscal ideology, while the third dimension is just as obviously moral ideology—not a single non-moral issue loads on the third factor.

The second factor carries perhaps more fiscal-ideological content than in some other datasets but is easily recognizable as tough-tender ideology. As in other datasets, it seems to tap an "us-versus-them" mentality and a willingness to be harsh to those who are different or outsiders. It is notable that the two fiscal issues that load on this factor are also the two which most explicitly mention "the poor" as objects of public policy. (The "government expanding services to help people" question does not mention a particular "outgroup" as the target of generous government policy.)

Note also that the second factor is quite clearly dominated by questions about crime. This is primarily the result of the inclusion in the survey instrument of more questions about crime than in other instruments used in the experiment, and the concern with crime explains why the "immigration" question loads on the "wrong" factor, the fiscal-ideological one. If we remove the "criminals are different" and "harsh on crime" questions and re-run the factor analysis (results not shown) the analysis yields three dimensions again, and this time the tough-tender dimension more closely resembles the tough-tender dimension of previous datasets in that immigration loads on the tough-tender dimension.

This result of course reveals the danger of reading too much into factor analysis's ability to "discover" latent variables that are "really there." The factors that are extracted are largely dependent on the questions we choose to include. However, we cannot escape the fact that once again in a northern sample, several issues which are conventionally perceived as part of "social" ideology do not appear as closely related to moral issues as they "should."

Table 3.16. Promax-rotated factor loadings from experimental dataset. N = 103.
Loadings above 0.3 shaded.

Variable	Factor 1 loadings	Factor 2 loadings	Factor 3 loadings
Income tax	0.43	0.20	-0.03
Economic interventionism	0.53	-0.13	-0.21
Tax rich, redistribute to poor	0.39	0.39	-0.06
Unilateral foreign policy	0.46	0.17	0.01
Guaranteed jobs	0.72	-0.23	-0.01
Public-versus-private health care	0.74	-0.05	0.11
Poverty is society's problem, not individuals'	0.36	0.30	0.20
Expand social services to "help people"	0.71	0.09	0.07
Death penalty	-0.10	0.52	-0.24
Harsh on crime	0.07	0.64	0.04
English-only laws	0.20	0.33	-0.15
Immigration	0.31	0.22	0.03
Military spending	0.32	0.19	0.10
Criminals similar or different from law-abiding people	-0.09	0.71	-0.07
Gay marriage	0.02	0.20	0.49
Ten Commandments on public property	0.16	-0.08	0.74
Alternative lifestyles	-0.08	0.56	0.37
Abortion	-0.12	0.03	0.69
School prayer	0.17	-0.03	0.60
Physician-assist. suicide	-0.04	-0.02	0.42

Finally, as is becoming customary, the fiscal and tough-tender dimensions, if scored, are more closely intercorrelated than either is with the moral dimension. $r_{\text{fiscal-tough-tender}} = 0.57$, $p = 0.0000$; $r_{\text{fiscal-moral}} = 0.22$, $p = 0.013$; and $r_{\text{toughtender-moral}} = 0.26$, $p = 0.004$, all p–values one-tailed. This result is duplicated when the two crime questions are removed, rs = 0.61, 0.34, and 0.20, respectively.

Yet additional evidence: in a study I conducted for a research project unrelated to this one, many of the same issue questions were asked yet again, and this time the sample once again was an adult sample from Tallahassee, Florida—a different sample than the one we have discussed already. The results (I promise to be brief here) were

very similar to the more extensively discussed Tallahassee sample: exploratory factor analysis suggested a one-factor solution. When three factors were nonetheless extracted, a clearly moral factor emerged (factor 2 in table 3.17), and the other two factors each contained aspects of fiscal and tough-tender ideology, with one of them seemingly more "purely" fiscal (factor 3), and the other uniquely containing the tough-tender issues death-penalty, English-only laws, and foreign-policy unilateralism, as well as environmental regulations which we have seen load on a tough-tender dimension previously. There are some aspects to this factor analysis which are not clean replications of previous results, but a general lack of perfectly clean factor distinction should perhaps not be surprising in light of the near one-dimensionality of the ideology phenomenon found, now twice, in Tallahassee.

All three factors intercorrelated at stronger than r = 0.67, and the fiscal and tough-minded (r = 0.80) are only barely more intercorrelated than the moral and the tough-minded (r = 0.74) or the moral and the fiscal (r = 0.67). The conclusion that, in the southern United States, a one-dimensional model of ideology is appropriate for at least some analyses, is strengthened.

Table 3.17. Promax-rotated factor loadings from Tallahassee dataset from unrelated study. N = 109.
Loadings above 0.3 shaded.

Variable	Factor 1 loadings: tough-tender dimension	Factor 2 loadings: moral dimension	Factor 3 loadings: fiscal dimension
Economic interventionism	0.38	-0.01	0.09
Tax rich, redistribute to poor	0.15	0.07	0.55
Unilateral foreign policy	0.68	-0.01	0.13
Public-versus-private health care	0.01	0.32	0.52
Gov't should help the poor more versus less	0.18	0.06	0.54
Death penalty	0.41	0.05	0.15
English-only laws	0.56	0.06	-0.03
Gay marriage	-0.06	0.86	0.12
Ten Commandments on public property	0.03	0.79	-0.11
Alternative lifestyles	0.00	0.72	0.19
Abortion	0.34	0.35	0.11
Regulations to help environment	0.66	-0.03	0.15

Chapter 4

Asymmetries, part 1: Do liberals and conservatives have different personality traits?

Everyone knows that liberals and conservatives are different kinds of people. Everyone, that is, except for political scientists, it seems, among whom the idea still retains some controversy.

The laypeople have it right. Dislodging a null hypothesis of no behavioral or personality-trait asymmetries between the two political types turns out to be an easy task, and this chapter and the next two will introduce a parade of nonpolitical asymmetries that differentiate political liberals and conservatives and suggest differences in psychology, not just in political ideas.

The real question, though, is whether, taken as a whole, these asymmetries seem to be pointing in the same direction, indicating a coherent psychological phenomenon. The claim here is that largely they do—and that the phenomenon is either perceptual categorization strength or at least something recognizable as cognitive rigidity/flexibility, to which C-strength is a very near theoretical approach. Not all the asymmetries will significantly correlate with our particular test of categorization strength, but only the narrowest thinker will find plausible the notion that these asymmetries are generally mutually unrelated, a random basket of correlational curiosities. As the man and woman on the street seem to know all too well, something big is afoot.

The first kind of asymmetry we consider is personality traits. Do liberals and conservatives have different personality traits? And are these differences suggestive of a theory that conservatives see the world in stronger categories or otherwise think in more "structured" or "rigid" patterns than liberals do? And do these differences hold for conservatives and liberals of the various stripes? Yes, yes, and yes.

Perhaps I overstate the reluctance of the political science establishment to entertain the idea of a psychology-ideology relationship. Political science is beginning to incorporate psychology into its understanding of opinion formation. The most famous recent (i.e., not part of the 1950s-era Authoritarianism tradition) published paper addressing the relationship between personality and ideology is still probably Jost and colleagues' "Political Conservatism as Motivated Social Cognition" (2003). And recent work in the biological sciences (Alford et al., 2005; Hatemi, et al., 2007; Oxley, et al., working paper, 2008; Amodio et al., 2007) is probably forcing political science down this road even more strongly, if more quietly.

Of course, nobody thinks there's a gene for liking big government—although the ridiculous notion that genes code for policy positions is sometimes used as a straw man by scholars who resist a genes-ideology connection (Charney, 2008). Genes must be coding for some interpersonal differences that can be characterized psychologically and which have secondary consequences in political thinking. What psychological precursors to ideology are we seeking, then?

Probably the easiest entree into a psychology-opinion formation link is via recognized and systematized traits such as those of the "Big Five" or "Five-Factor Model."[1] (Saucier and Goldberg 1998 for Big Five; Costa and McCrae 1988 for Five-Factor Model). The five dimensions, generally, can be described as Extraversion or Energy (roughly assertiveness); Openness to Experience (enjoying abstract thought, art and culture); Conscientiousness (hard work, organization, punctuality); Agreeableness (compassion and approachability); and Neuroticism (depression, anxiety). I will make use of four of the Big Five, excepting Neuroticism (since it's rarely linked to ideology, but see Gerber 2009) and other traitlike variables.

Personality traits present theoretical advantages and disadvantages for understanding opinion formation. The advantage is that they are generally thought to be psychologically basic and causally prior to attitudes. If traits are *related* to ideology, then it's unlikely that this relationship is generated when learned or acquired ideologies cause people to adopt ideology-specific personalities. (Although one weakness of traits-ideology research is that one *could* imagine that acquired ideologies might induce people to *portray themselves* as having ideology-appropriate personalities.) Personality traits are, indeed, expressed at an age earlier than most scholars believe political ideology develops (McGhee, et al. 2007) and are known to remain stable over an entire life course (Soldz and Vaillant, 1999).

The theoretical disadvantage of personality traits is that, however temporally prior to opinions, they are not well positioned to make claim to being true *causes* of cognitive outputs. This is because, as measured, they are not cognitive-process variables at all. To illustrate, a cognitive-process variable such as perceptual categorization strength is certainly likely to be related to trait Openness. It's not hard to explain why this might be. People who do not perceive the world in rigid categories should be more receptive to alternative ways of categorizing or characterizing the world. Experimental worldviews, such as are often found in art, would simply appear more plausible and less ridiculous to weak categorizers. Abstract and philosophical thinking would probably be more satisfying to weak categorizers because, were the world to appear more sharply defined to them, philosophical wanderings would take on the appearance of a needless search for answers that are either readily available, permanently hidden, or useless.

Openness to Experience, sure enough, contains questions about a person's predilections for abstract thought and enjoyment of art. But Openness makes for a theoretically lousy mediator between categorization and opinion formation because it's not a cognitive-process measurement; it's rather a self-report of private enjoyment or even of one's own outward behavior. "I take the conversation to a higher (philosophical) level." "I enjoy abstract thinking." Arguing that one prefers individualistic economic policies *because one enjoys talking deeply about things* is

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[1] The two—the Big-Five and Five-Factor Model (FFM)—are actually distinct, but for our purposes only trivially, and I will use the terms interchangeably, with apologies to the proponents of one scale or the other. The items I use to measure traits are FFM-style items.

more than a bit of a stretch. Seeing the world as sharply categorized may well cause a person to become philosophical, but that itself does not in turn cause people to oppose immigration or the death penalty. It's rather more intuitively satisfying that categorization itself would directly result in a perception of immigrants as categorically different from "us," or criminals as more categorically irredeemable.

I hypothesize also that categorization is generative of (or at least a component of) a style of deliberation which *could* have opinion-generating effects, as via a mechanical and ultra-clear conception of cause and effect in the world. But facially, Experiential Openness obviously doesn't capture this either, even if we strongly intuit that abstract-thinking art-lovers are also less likely to see cause and effect mechanically.

This doesn't mean Openness and other traits aren't good theoretical guideposts, though. We know who these "open" people are. We "get" at a gut level that people who are very abstract thinkers, who frequent coffeehouses rubbing their bearded chins and challenging conventional ideas are exactly the people whose cognitive style is never to settle on the obvious, if to settle at all. But artsy philosophers do not think so "outside category" *because* they just "are philosophical" or "are open." Rather, when we describe someone as "philosophical" or even "open-minded," we are referring the *consequences* of their cognitive style, not the causes. Still, self-description traits like Openness help greatly in the *search* for cognitive explanations of political opinion formation.

Openness is the closest of the five traits to capturing cognition. The other four seem more primitively dispositional, and hence even less a description of a possible opinion-outputting cognitive process. Extraversion, for example, is a self-report of assertiveness, or of intrapsychic comfort being assertive. "I take charge." "I am comfortable having authority over others." "I start conversations."

In a way, the other traits' dispositional nature makes them more attractive than Openness as early, though indirect, causes of opinion. Take Extraversion: people who are "forward"—and especially those who are confrontationally so—may develop a cognitive style to serve that forwardness, a decisiveness which may include strong perceptual categorization, as of potential adversaries or of their milieu generally. This "extraversion-causes-categorization" model, of course, describes not a cognitive process that takes place over a period of seconds, but a developmental process that takes years: however valid a model, people do not generate opinions with their forwardness or reticence; it is cognition which generates opinion. So Extraversion, Openness and the other traits—as well as the other behavioral asymmetries of the next chapter—remain primarily as guideposts to ideology's cognitive precursors, not as causes themselves.

A self-indulgent digression

Before I go through the almost unnecessary explanation for why certain traits should predict certain ideologies, I'll allow myself a digression. Recall the conventional wisdom holding fiscal conservatives and liberals are equally "open." If

this turns out to be incorrect—and especially if one agrees with McCrae (1996) that Openness has special social consequences—considerable damage will have been done to the popular notion that social and fiscal conservatives are as unlike each other as they are unlike liberals, and thus that modern conservatism, fiscal and moral, is a temporarily and precariously "fused" alliance of political convenience (see Edwards, 2007, for a short conventional history of fusionism). Numerous American political commentators, especially liberal ones (most notably Thomas Frank, 2004, in the popular book *What's the Matter with Kansas?*), have lamented that so-called "red state" voters—socially conservative and far from wealthy—in supporting Republican candidates who champion pro-wealthy policies, appear to vote against their own economic interests and so must have been "taught" to believe in a fiscal conservatism they should reject. This is supposedly accomplished by conservative elites who exploit red-staters' inclination toward moral conservatism. Presumably, social conservatism *could* as easily be bundled with economic *liberalism*, and vice-versa, if elites found doing so politically useful. This argument is made quite assertively by Miller and Schofield (2008) who state that the space of policies is exactly two-dimensional, that the dimensions are entirely orthogonal, and that we can expect a near-future realignment in which pro-business economic conservatives will join forces with "social" liberals in one party (the Democratic) while "social" conservatives will join with populist economic liberals in the other (the Republican). Beyond the near future, they say, the complete independence of the two dimensions guarantees eternal instability of party-alignment structures.

My analysis, however, could cast some doubt on the idea that flinty individualist frontiersmen will soon be making common cause with effete Massachussetts liberals and their Democratic party, for if the same stable *traits* which predict "social" ideology independently predict fiscal ideology, it is more difficult to argue that "any issue position can go with any other issue position."

In other words, I stand with Bobbio (1997) and a hero of his, Dino Cofrancesco (1990), in viewing left and right as mostly independent of historical context—at least *directionally*. Bobbio would say leftness is, directionally, eternally for more equality, rightness for more hierarchy. Leftness and rightness are "not contingent, incidental, or subject to the variety of historically determined positions." For example, because left-wingers of 200 years ago were "for" universal male but not female suffrage, this does not mean that left-wingers of yore can be counted as being in "disagreement" with the gender-equality-endorsing positions of today's left, thereby rendering leftness an empty concept. And yet one hears these kinds of tired arguments frequently: the "old guard" of the Soviet Union, rightly understood as conservative, were for a large central government. Does this actually make them liberal? Or, if they're conservative, does that mean conservatism "is here for big government, there for small government, and hence there is no definable content of conservatism"?
Bobbio would say on the contrary that there is clearly meaningful content to conservatism, and I concur. While I would argue the "egalitarianism" of communist old-guard leaders is worse than suspect, the way around these moth-eaten objections

is to regard ideology as a psychological phenomenon that is at least somewhat situated within cultural contexts but nonetheless has systematic effects on the ways people perceive, conceptualize, and deliberate on certain kinds of political questions. Conservatives in Europe are "for" universal health care not because they're actually liberal by American standards, but because they are conservative within a certain day-to-day, European, reality. Factually, European conservatives *are* less enthusiastic about universal health care than European *liberals* are.

As for the old U.S.S.R., the ability of totalitarian states to render to all who are not in the government an "equal" status—as lowly expendables—is I suppose a legitimate point of argument, but for the most part my argument applies to societies in which there is sufficient freedom for citizens to formulate and argue for their ideas, and where sufficient stability exists that coalitions can emerge. Where there is a viable marketplace of political ideas, I argue, left and right will emerge, and they will look *directionally* much the same, due to the psychology upon which they are built.

Along the lines, however, of the supposed ability of communism to "flip left and right" so that liberals become individualist-capitalists and conservatives favor "equality," a worthy challenge exists in the literature to my suggestion that psychology is inherently connected to directional preferences for "right" or "left" policies, and the paper must be mentioned. Kossowska and Mervielde (2003) strongly support a traits-ideology link but nonetheless challenge the notion that psychological processes drive ideologues toward particular positions or even in particular directions. Rather, they argue that the psychology-ideology link is *entirely* historical-context-dependent—i.e.*,* that closed-mindedness can be associated with *any* ideological position or direction, including with more egalitarianism, if the societal context is right for it. The authors find that Webster and Kruglanski's (1994) Need for Closure (NFC) Scale, here occupying the closed-mindedness/cognitive rigidity slot, is positively correlated with most measures of conservatism across a Flemish and Polish sample, but is *negatively* correlated with economic conservatism among Poles. The finding seems to indicate that high levels of closure indicate a preference for the status quo, or the way things have been—meaning state ownership of industry, an ostensibly "liberal" position. The data were acquired in the early 1990s, when Polish society had just undergone the transition from communism to capitalism. Moreover, a single component of NFC, the "need for simple structure" (Neuberg, et al. 1997) is the component of Closure which accounts for the negative correlation (the other component is decisiveness, unrelated to economic ideology in the Polish sample), and this component is associated with the "freezing" concept of NFC (of "seizing and freezing"), suggesting that this is essentially a measure of holding fast to long-held beliefs.

In other words, holding to long-held beliefs is associated with a preference for the status quo, even if that status quo is Socialism.

I don't challenge this notion. Progressives who lived behind the Iron Curtain no doubt longed for more economic freedom (along with general freedom for all). But can we coherently say with a straight face that they were "fiscal conservatives"?

I certainly can't. I suspect the Open-minded citizen's preference for "economic conservatism" in communist societies has little to do with hardscrabble "individual responsibility" as it does in the United States and much to do with the humanitarian desire to see people emancipated from debilitating bondage. One way to approach this question is through the tough-tender dimension of ideology. From the data presented here, tough-tender and fiscal ideology are closely related. Were the more Open-minded Polish citizens, supposedly "fiscal conservatives," in favor of harsher punishments of criminals? Strict immigration limits? And were the communist hard-liners in favor of leniency? Were they for state ownership of industry because they believed strongly in cooperation, equality and a sharing of wealth? Or because the system as it existed had made them powerful?

Another question about Kossowska and Mervielde's results is, after 50 years of Democracy in Poland, can we expect cognitive rigidity to continue to predict socialist preferences? Or will the new generation of tough-minded and inflexible thinkers, now that economic success is possible in a capitalist system, prefer the more mechanical connection between effort and reward, between poor performance and tough-cookies outcomes? C-theory predicts that, given time for Poland's communist past to recede into history, a new alignment of cognitive rigidity and tough economic conservatism will arise. We at least know that the correlation between NFC and economic "liberalism" was higher among Poland's older population than among its young, and so the seeds of such a realignment might already be sprouting.

And yet, even if such a realignment is on the way, don't K&M's results show that the cognitively flexible can adopt more anti-egalitarian policy positions where the context is just right for such an alignment—i.e., where societies are communist? Even this is not an inescapable implication. The "freezing" aspect of NFC is not necessarily the same thing as the cognitive rigidity captured by Categorization Strength and by other cognitive-process variables I investigate, and indeed the other facet of NFC, "decisiveness," was found by K&M unrelated to economic ideology in Poland.

But in conclusion, yes, it's possible the soft-minded can be induced to oppose communalism and cooperation when that communalism is instantiated in a ruthless, totalitarian government. But this is not the same thing as showing there's no psychological connection between Openness and redistributionist economics. At any rate, the question of whether historical happenstance or context can ultimately lead to long-term alliances between fiscal conservatives and moral liberals will not be settled in this dissertation.

Theory connecting personality to ideology

Outside of theory offered here, other scholars have made some attempts to link traits to ideological opinion formation. Probably the most straightforward theory in the literature is Caprara and Zimbardo's (2004) "congruency model," grounded on the theory that voters vote for policies and leaders who display voters' own traits, using personality as a heuristic. Voters not only utilize trait similarities between

themselves and politicians as a cue for judging that politicians share their values and preferences, but the parties' most salient ideological principles themselves can be said to contain elements of personality. For example, the authors point out that the Italian center-right coalition "campaigned mostly on entrepreneurship and business freedom" which aligned with Berlusconi's image as "identified with Energy" (i.e., Extraversion).

Jost et al. (2003) connect traits to ideology in a different way than Caprara et al. For these authors, traits are identifiers of deep psychological *motives*—in particular, motives to manage uncertainty and fear. Traits such as Openness to Experience or traitlike motives such as Intolerance of Ambiguity (Budner 1962, Sidanius 1978) or Uncertainty Avoidance (Wilson 1973) are variables that can identify people who are likely to find psychic benefit in the adoption of conservative beliefs. Someone with low Openness, might find new ideas threatening; someone with a high need for closure would desire quick or definitive answers to life's questions. The principle components of conservatism help people to resolve these issues.

Another possible conduit from traits to opinion formation is via the social group. Drawing on Social Identity Theory (Tajfel and Turner 1979; Tajfel 1981) and Social Categorization Theory (Turner et al. 1987), ongoing work by myself and Huddy (2007) suggests people may "join" ideological camps based on their own trait similarity to other members of the ideological group. Adopting the "right" opinions would follow as a means of optimizing one's similarity to the in-group and increasing self-esteem.

Finally and intriguingly, Alford and Hibbing (2007), citing the inconsistent (if voluminous) nature of previous findings linking traits to ideology and the failure of their own behavioral-game-theory-style experiments to differentiate liberals from conservatives with respect to generosity, come very close to elevating left-right ideology itself to the status of a trait, or "temperament." They see no reason to place Big Five traits in a privileged position as necessarily causally prior to political disposition.

The hypotheses presented here are simple and theoretically based mainly on Categorization and cognitive-rigidity theory. Given the premise that high cognitive rigidity and categorization strength cause conservatism in all dimensions, I simply hypothesize that this effect will be reflected in differences in personality traits between liberals and conservatives of all dimensions in the ways described below.

In each case, the personality trait is hypothesized to be *independently* related to each dimension of ideology—meaning that the connection is not mediated by a different dimension of ideology. This is especially important in the case of Openness, which serves to illustrate the point: the conventional wisdom, based largely on Authoritarianism research, is that Openness is related to social-moral ideology, but not to fiscal ideology. The implication is that, if we were to find that Openness *were* negatively correlated with fiscal conservatism, we could brush the finding aside, reasoning that it's only because fiscal conservatives tend to be morally conservative also; controlling for moral ideology should extinguish the effect. The predictions here

hold that such controls *will leave trait-ideology effects intact*, indicating each dimension of ideology is related to the hypothesized traits independently and not only as mediated by other ideological dimensions.

Hypothesis 1a (Openness and secular ideology): Fiscal and tough-minded conservatives will be lower in Openness than fiscal and tough-minded liberals, since categorization strength has effects on both ideology and Openness scores. High categorization strength results in conservatism via categorization of "the other" (the poor, criminals, immigrants, other nations) as more distinct from "us," a conceptual seed of conservative ideology; with additional effect via categorization's impact on deliberative style as described elsewhere. Meanwhile, low categorization strength causes high Openness scores because low internal cognitive boundaries lead to introspection and extended philosophical wanderings, precisely the kinds of intrapsychic experiences Openness questions pick up on.

Indeed, much of this chapter will be devoted to establishing a link between Openness and *secular,* especially fiscal ideology, because the Openness-moral ideology link is not particularly controversial among modern political psychologists, while the Openness-fiscal ideology link is conventionally viewed as so obviously nonexistent as to render research on it a waste of time.

Hypothesis 1b (Openness and moral ideology): Moral conservatives will also be lower in Experiential Openness than moral liberals, since categorization strength has effects on both moral ideology and Openness scores. This hypothesis is perhaps more obvious, as it seems grounded in the Authoritarianism research, and also in that of Jost and colleagues. It also conforms to conventional ideas about "religious conservatives" or the "Christian right" being excessively "closed minded" (an idea of which I'm more suspicious than most, but I will utilize it for hypothesis generation here).

The idea here is simply that, as with secular conservatism, there's a connection between categorization and religious conservatism too. People who view the world in categorical terms may find very definitive settlements of questions, such as are found in conservative religions, more satisfactory. To the extent that morally conservative positions on political issues (homosexuality, alternative lifestyles, abortion, doctor-assisted suicide) constitute final judgments about right and wrong, a closed-minded or categorizing cognitive style should lead to endorsement of morally judgmental policies. Some morally conservative positions may also draw strength from the tendency to categorize "others"—say, gays—as categorically different from "us."

Hypothesis 2a (Extraversion and secular ideology). Fiscal and tough-minded conservatives will be higher in extraversion than their liberal counterparts. Fiscal conservatism is driven by a competitive desire and a seeking to allow society's winners to retain their reward; assertiveness, leadership and dominance are components of Extraversion; and the assertive are largely those who plan on being winners. The categorization connection is this: those who are assertive, decisive, and dominant need a cognitive style which serves this combat-oriented disposition. A hesitance built on a failure to make sharp distinctions would undercut such decisive

action. This chronic (*not* intrapsychic) "need for decisiveness" translates into high categorization strength.

Tough-minded conservatism might not be as concerned with societal upward mobility, but the tough-minded are easily predicted to be more personally dominant (not necessarily "Socially Dominant," see Sidanius and Pratto 1999) and assertive—that is, people who are themselves more interpersonally punitive congruently seek policy that is also. And such combative personalities also require a cognitive style that strongly categorizes as "other" the targets of their animus.

Hypothesis 2b (Extraversion and moral ideology). I see only the weakest reason why moral conservatives should be more extraverted or assertive: their moral certainty may prod them to assert themselves against those whom they see as being immoral people. So perhaps a categorization could make for moral conservatives who are also more extraverted. However, it's not clear that such anti-immorality action constitutes a personality trait as much as a logical reaction to religious instruction. Moreover, the Authoritarianism that produces moral conservatism often predicts *submission* to authority as strongly as assertiveness. A perhaps more interesting idea is that moral conservatives' preference for the strong leadership of a church, or of a deity, might indicate a preference for decisiveness in leaders, an idea to be explored later.

Hypothesis 3 (Conscientiousness and all dimensions of ideology). All dimensions of conservatism will be related to higher levels of trait conscientiousness. This prediction has little to do with categorization directly, but if supported still tells us a good deal about what it means, psychologically, to be conservative or liberal. Fiscal conservatives should see themselves as the deserving recipients of the rewards of hard work—i.e., as hardworking and taking care of duties. Tough-minded conservatives should see themselves as meeting the standards to which others are held under threat of punishment. And moral conservatives should see themselves as moral and clean-living.

There is, however, a potential categorization connection here. If people generally see themselves as good, clean, and responsible, then a strong categorizer should see herself as *categorically* good—whereas a weakly categorized view of self may allow for a more diverse mixture of positive and negative self-descriptions. Curiously, I would expect this finding to apply only to fiscal and tough-minded ideologues, as moral conservatives may well see themselves as anything but categorically perfect, and may seek self-perfection through religion. The warrior spirit of economic aggressiveness, however, strikes me as benefiting from a level of self-confidence consistent with at least an implicit perception of self as categorically good, right, and deserving.

Hypothesis 4 (Agreeableness). Fiscal and tough-minded conservatives will be lower in Agreeableness. This prediction is mainly driven by the obvious connection between trait compassion—a component of Agreeableness scales—and the treatment of outgroups or very different people with generosity. Such compassion, could, of course, also be related to the perception of others as less categorically different. Moral ideologues are not predicted to differ in Agreeableness.

Before turning to results, a review of past findings is in order.

Previous work

Although psychologically profiling liberals and conservatives is not a new practice—Clinton Rossiter's *Conservatism in America* (1955), for example, offers a profile of the American conservative which is unmistakably psychological in tone—a history of serious *empirical* investigation into the psychology-ideology connection must begin with Adorno et al.'s (1950) *The Authoritarian Personality*. The authors' attempts to measure individuals' susceptibility to fascism spurred much research over the next two decades aimed at explaining political behavior using various traitlike variables such as tender- and tough mindedness (Eysenck, 1954) and dogmatism (Rokeach, 1960). However, a lack of a theoretical rigor in personality research and the overproliferation of trait variables seem to have dampened enthusiasm for the psychological approach to ideology by the early 1970s (Caprara, et al. 1999; and Jost, et al. 2006).

Following a resurgence of interest in studying psychological tendencies in political leadership (Etheredge 1978; Tetlock 1983), it was the emergence of the modern five-factor model and the "Big Five," especially the publication of Costa and McCrae's (1985) now commonly used personality inventory (The "NEO-PI"), which began to restore respectability to the study of ideological thinking through personality traits. The Five-Factor Model represented, in Caprara's words, the long-awaited "integrated conceptual vision" and "consensual standard" for studying personality.

Thanks to the resulting research industry, there is a good deal of evidence supporting the idea that Big-Five traits are related to ideology. However, one new wrinkle added in this chapter to previous research concerns the fact that seldom has explicitly economic (or, certainly, tough-tender) ideology been studied as a correlate of personality. Moreover, the clearest links between economic ideology and traits have come from European research, so that the left-right dimension which American political psychologists are most likely to have seen connected with traits carries a distinctly social-moral flavor. Addressing a traits-*fiscal* ideology link is of especial interest here.

Caprara et al. (1999) used Big-Five traits to study personality profiles of Italian voters and found supporters of a center-right coalition higher in Extraversion and Conscientiousness, while center-left voters displayed more Agreeableness and Openness. Van Hiel et al. (1999) studied the relationship between Openness to Experience and ideology, looking separately at various facets of Openness. Measuring ideology using questions about modern issues in Belgium, they found certain facets of Openness positively related to leftward thinking in adult and student samples, but not in a sample of political party activists. Their "political belief questionnaire" yielded a general left-right factor that consisted largely, but not entirely, of economic issues.

Van Hiel and Mervielde (2004) found relationships between an alternate measure of Openness, "Boundaries in the Mind" (Hartmann 1991), and political

ideology, using multiple indices of ideology including a general Conservatism scale, Right-Wing Authoritarianism (RWA; Altemeyer 1988), left-right self-placement and political party preferences. And using the factor-analytic approach, Riemann et al. (1993) found Openness negatively related to general Conservatism in a European sample.

Because of these studies, and also because moral ideology constitutes a smaller component of European than American political dialogue, a finding that personality and ideology are related would, in Europe, suggest that personality and an *economics*-oriented ideology are related, although even in European studies a link between traits and explicitly fiscal ideology has not, to my knowledge, been demonstrated. On the other hand, in North America the Authoritarianism-dominated legacy of personality research in political science seems to have left a strong impression that traits are primarily related to ideas about alternative lifestyles, abortion, gay marriage, pornography, religion in public life, and so forth.

In his landmark meta-analysis of the relationship between Openness and various social tendencies including political behavior, McCrae (1996) mostly continues this American tradition. Although he makes reference to economic ideas when musing about how people's taking offense at a nude statue might correlate with their feelings about a capital gains tax cut, the bulk of McCrae's commentary is focused squarely on moral thinking. "Conservative individuals," he writes, "tend to be…behaviorally rigid, socially conforming, and conventional in their *moral* reasoning" (emphasis mine). Citing research in which conservatism is measured by Wilson and Patterson's (1968) Conservatism Scale, McCrae shows that conservatives have been found intolerant of ambiguity, rigid, and obedient—all concepts closely related to Authoritarianism.

The Wilson-Patterson questionnaire is the source of the measures of political thinking in Alford et al.'s (2005) twin-studies paper on ideological heritability, and its conservatism scale (C-scale) is one of the most common scales used in the ideology research cited in Jost et al. (2003). The contents of the "C-scale" are striking for their emphasis on concepts of moral ideology—striptease shows, pajama parties, nudist colonies—as well as elements of tough-minded conservatism that are often regarded as closer to social conservatism than to economic, but which we have seen are not. The numerous studies connecting Openness to conservatism on the C-scale are thus generally regarded as evidence for an Openness-*social* conservatism relationship. This is a mistake, and not only because some "social" issues are more closely related to fiscal ideology than to moral. A close look at the individual items used in Alford et al. (they do not use the entire C-scale, but select 28 items) does reveal the presence (and striking heritability) of opinion on individual items that are clearly related to economic ideology: opinions on property taxes, capitalism and unions are all quite heritable, indicating the likelihood of a psychology-fiscal ideology link.

Recent American thinking on psychological bases of ideology, however, is surely most influenced by Jost et al. (2003). The vast majority of the ideology measures cited in this exhaustive meta-analysis (containing 88 samples) relate to social ideology: many use Adorno et al.'s F-scale, others the C-scale. Altemeyer's

RWA is commonly used. Also common is left-right self-placement, never explicitly economic. A smaller number of studies cited by the Jost team make use of Social Dominance Orientation (SDO; Sidanius and Pratto 1999) as a measure of political ideology (and this measure is often considered a traitlike psychological variable too) and SDO has been treated as a plausible proxy of fiscal conservatism (see Weber and Federico 2007, for example). But SDO is not, on its face, a measure of the principles of economic conservatism so much as of a favorability toward explicitly group-based inequality. A smattering of samples mentioned in Jost et al. do make use of Rokeach's (1960) Political-Economic Conservatism (PEC) scale, and this is the most focused on economic conservatism their evidence gets. Ultimately, the Jost team's arguments about the motivational basis for conservatism just don't center on the economic aspects of ideological thinking.

Recently, Mondak and Halperin (2008) demonstrated in multiple American samples that Big Five traits are related to a proliferation of political attitudes and behaviors, but again none of them is explicitly *fiscal* ideology, and the nearest approach appears to be the perception that recent economic trends have affected only some groups as opposed to all groups equally. Gerber, et al. (2009) demonstrate that economic ideology in particular, as well as "social" ideology, is related to traits (including, for the first time to my knowledge, economic conservatism with low Neuroticism/high Emotional Stability). In Gerber et al., the results regarding Openness and ideology have both "social" and fiscal conservatism negatively related to Openness, but consistent with most assumptions, Openness and social ideology appear more strongly related. There is also in the literature the result that Openness has been found negatively related to Social Dominance Orientation (Pratto et al. 1994) in one sample.

The supposed "failure" of Openness to (negatively) predict fiscal ideology will not be so readily the case here, and will be even less the case when we relax the assumption—a growing one, I'm afraid—that the only valid way to measure individual differences is via Big-Five traits (and the only way to measure differences in cognitive flexibility is via Big-Five questions about Openness). But I still start with the Big Five.

Data and scale construction

I use data collected from student samples 1 and 2 and from the Tallahassee adult sample. To review, in Tallahassee laptops were used and the surveys were administered in local coffeehouses or professional offices which agreed to allow their employees to participate. Personality questions were retrieved from the International Personality Item Pool (IPIP; Goldberg 1999, Goldberg et al.*,* 2006), a web-based resource. In addition to Openness, Extraversion, Conscientiousness and Agreeableness, I gathered data on the Extraversion-related trait Dominance, also using IPIP questions. I also make use of Budner (1962) and MacDonald (1970) items measuring Ambiguity Intolerance (AI), combining them to generate a general AI

scale. Budner himself considered Ambiguity Intolerance a personality trait measure, and I will use it in this analysis as an alternate measure of Openness.

The actual trait-measurement questions used across the three samples are shown in table 4.1. All trait items *other than Ambiguity Intolerance* were presented together, intermixed and randomized. Subjects indicated that a statement that began with "I"—as in "I work hard"—was "very inaccurate," "inaccurate," "neither accurate nor inaccurate," "accurate," or "very accurate" with regard to them, in comparison to other people of their same age and sex. The Ambiguity Intolerance items were presented separately, at a different point in the survey, and asked students to "strongly agree," "agree," "neither agree nor disagree," "disagree" or "strongly disagree" with a statement that *could,* but did not always, begin with "I." The AI items were randomized as well, but were asked consecutively and not intermixed with other traits.

All trait indices were created using Stata 9's alpha command. Each item's responses were first standardized and then the mean score across items, ignoring missing items, became the subject's "raw" score on the trait. This procedure produces an additive scale with a standard deviation of less than one, so the raw scale was itself then standardized prior to analysis for ease of interpretation. Common notions of conservatism are scored more positively, as is the prevailing convention in political science research.

A look at table 4.1 reveals that the same trait items were not used in each sample to measure each trait or ideology factor. There are three reasons for this. First, since traits are not the main focus of this research program, in no dataset was there time to administer the entire battery of questions found at the IPIP website. Truncated versions are used. Second, research needs evolved as I gathered data. For example, during the first round of data-gathering I was extremely interested in measuring extraversion in multiple facets—hence the separate scales for dominance, leadership and "standard" extraversion. In the third dataset, since dominance had appeared to be the facet of extraversion most predictive of ideology, I retained only dominance items.

Sometimes an item is asked but is not included in its proper scale because, for a particular sample, it might scale poorly with other items measuring the same trait and have a deleterious effect on alpha. On occasions where an item only slightly lowered alpha and nonetheless seemed an integral conceptual component of the measure, I kept it in the scale.

In the table, I present Crohnbach's α for each scale from each sample, and for the sub-scales (dominance, leadership, standard extraversion) from sample 1. Alphas are all quite satisfactory, with the slight exception being a mediocre alpha of 0.55 for the three Agreeableness items from sample 2. The Ambiguity Intolerance items were not administered to student sample 1 at all, and were only administered to subsets of student sample 2 (subsample N=100) and Tallahassee (N=55).

Table 4.1. Items contributing to trait scales, with corresponding alphas

Trait-measurement Question	Used in student samp. 1? / Crohnbach's α	Used in student samp. 2? / Crohnbach's α	Used in adult sample? / Crohnbach's α
OPENNESS TO EXPERIENCE			
I carry the conversation to a higher philosophical level.	Yes		Yes
I enjoy philosophical discussions.	Yes	Yes	Yes
I rarely look for deeper meaning in things.	Yes	Yes	Yes
I am not interested in abstract ideas.	Yes	Yes	
I have a vivid imagination.	Yes		
I get excited by new ideas.	Yes		
Crohbach's α	**0.69**	**0.67**	**0.74**
EXTRAVERSION			
Dominance items			
I often let myself get pushed around.	Yes	Yes	
I avoid confrontations.	Yes		
I like to put people under pressure.	Yes		Yes
I lay down the law to others.	Yes	Yes	Yes
I assertively challenge others' points of view.	Yes	Yes	Yes
I am not afraid of providing criticism.	Yes		
I demand explanations from others.	Yes		
I impose my will on others.	Yes		Yes
I am quick to correct others.	Yes		
I win confrontations.	Yes	Yes	Yes
Crohnbach's alpha, sample 1 dominance only	**0.78**		
Standard extraversion items			
I wait for others to lead the way.	Yes	Yes	
I find it difficult to approach others.	Yes		
I take charge.	Yes	Yes	
I am quiet around strangers.	Yes		
I have little to say.	Yes		
I keep in the background.	Yes	Yes	
I talk to a lot of people at parties.	Yes		
I start conversations.	Yes		
I am often wish-washy about things.		Yes	

Table 4.1, continued

Crohnbach's alpha, sample 1 standard extraversion only	**0.87**		
Authority/leadership/decisiveness items			
I like having authority over others.	Yes		
I see myself as a good leader.	Yes		
I am comfortable having power over others.	Yes		
I dislike having authority over others.	Yes	Yes	
I tend to lead others.	Yes	Yes	
I usually make important decisions quickly and confidently.		Yes	
I have backbone, meaning a strong, steady, solid character.		Yes	
I make decisions with confidence and I don't look back.		Yes	
I would describe myself as indecisive.		Yes	
Crohnbach's α, sample 1 authority only	**0.85**		
Crohbach's α, full extraversion scale	**0.91**	**0.86**	**0.73**
AGREEABLENESS			
I have a soft heart.	Yes		
I take time out for others.	Yes		
I feel others' emotions.	Yes		Yes
I am not interested in others' problems.	Yes	Yes	Yes
I feel little concern for others.	Yes		
I know how to comfort others.	Yes	Yes	Yes
I sympathize with others' feelings.	Yes	Yes	Yes
I am an angry person.			Yes
Crohbach's α	**0.80**	**0.55**	**0.67**
CONSCIENTIOUSNESS			
I am always prepared.	Yes		
I pay attention to details.	Yes		
I get chores done right away.	Yes	Yes	Yes
I like order.	Yes		
I follow a schedule.	Yes	Yes	Yes
I often forget to put things back in their proper place.	Yes		
I make plans and stick to them.	Yes		Yes
I find it difficult to get down to work.	Yes		

Table 4.1, continued

I do things in a halfway manner.	Yes		
I work hard.		Yes	Yes
I put work above pleasure.		Yes	Yes
Crohbach's α	**0.82**	**0.66**	**0.74**
AMBIGUITY INTOLERANCE			
MacDonald items:			
There's a right way and a wrong way to do almost everything.		Yes	Yes
Vague and impressionistic pictures really have little appeal for me.		Yes	
I don't like to work on a problem unless there is a possibility of coming out with a clear-cut and unambiguous answer.		Yes	Yes
Budner items:			
An expert who doesn't come up with a definite answer probably doesn't know too much.		Yes	Yes
A good job is one where what is to be done and how it is to be done are always clear.		Yes	Yes
In the long run it is possible to get more done by tackling small, simple problems rather than large and complicated ones.		Yes	
What we are used to is always preferable to what is unfamiliar.		Yes	Yes
A person who leads an even, regular life in which few surprises or unexpected happenings arise really has a lot to be thankful for.		Yes	Yes
Crohnbach's alpha		**0.76**	**0.75**

Analysis

Standardizing all the indices—both trait and ideology—allows the three datasets to be combined for an N of 464. This in turn allows for a quick and basic test of the hypotheses of the chapter shown in tables 4.2, 4.3 and 4.4, testing the relationship between traits and, respectively, fiscal, tough-tender, and moral ideology. I conduct the test simply by regressing liberal-conservative ideology, measured by issue positions, on all four of the concerned Big-Five traits at once, plus a crucial covariate discussed in the next paragraph. I use all the traits at once because, as they themselves intercorrelate, it's possible that zero-order correlations between a trait and an ideological dimension either conceal or overestimate an existing relationship.

It's necessary to discuss the fifth covariate before diving into the tables. In table 4.2, fiscal ideology is regressed on the four Big-Five traits and on self-identified "social" ideology, which, recall, was originally a 7-point Likert-style item and is re-coded to range from 0 to 1. The "social" self-ID measure—which is defined for survey participants as moral in character—is included as a covariate precisely because American political psychologists have traditionally thought of the relationship between traits and ideology as one concerning mainly *moral* ideology. Without this covariate, it's easy to argue that any fiscal ideology-personality link is entirely mediated by social ideology.

I control for *self-identified* "social" ideology as opposed to moral conservatism as measured by issue positions for two reasons: (a) in order to "learn" the "appropriate" fiscally conservative or liberal positions, an individual presumably must understand that his moral preferences are in fact conservative or liberal; and (b) my theory argues that both moral and fiscal ideological *thinking* are to a certain extent caused by the same underlying psychological forces, which, if true, means that placing an issue-position-based measure of moral conservatism on the right side of the equation introduces additional and unnecessary simultaneity into the model: I'd be explaining liberal-conservative thinking with a different measure of liberal-conservative *thinking*. Self-identification is therefore the appropriate measure.

When in table 4.3 we observe the "effect" of traits on tough-tender ideology, self-identified "social" conservatism will also be controlled for, since tough-tender ideology generally appears more related to fiscal ideology. And in table 4.4, when we assess the "effect" of traits on moral ideology, I control for self-identified *fiscal* ideology. I do this in service to symmetry, even though no scholar I know of suggests, or would suggest, that the relationship between Openness and moral ideology is mediated by fiscal ideology.[2]

The results of table 4.2, below, are straightforward. All four traits are related to fiscal ideological thinking in the expected direction, and net of the effect of self-identified social ideology, which does still have a strong effect in the obvious, expected direction.

That is, however "socially" conservative one considers oneself to be, and holding constant all the other traits, a 1 standard-deviation increase in Openness is significantly associated with a 0.08-standard-deviation move in the direction of fiscal liberalism. The same increase in extraversion—with that measurement typically containing a strong dose of dominance-oriented questions—predicts a 0.12-standard-deviation move in the direction of fiscal conservatism. At similar levels of strength, people in the sample who are more Agreeable are more fiscally liberal, and people who are more conscientious or see themselves as harder-working are more fiscally conservative.

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[2] …although after reading this dissertation, the reader will see that this might appear more plausible than the more conventional notion that moral ideology mediates between traits and fiscal ideology!

Table 4.2. Fiscal ideology, measured by issue positions, standardized.
OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Big-Five Openness to Experience	-0.08* (0.049)	-1.65	0.05
Big-Five Extraversion	0.12** (0.049)	2.48	0.007
Big-Five Agreeableness	-0.11** (0.046)	-2.45	0.007
Big-Five Conscientiousness	0.09* (0.047)	1.93	0.025
Self-identified "social" ideology[3] (coded 0-1, conservatism higher)	0.78** (0.160)	4.88	0.000
Constant	-0.28 (.07)	-3.83	0.000
N=464, $R^2 = 0.11$			

**p < .01 *p < .05 † p < .10

That is, however "socially" conservative one considers oneself to be, and holding constant all the other traits, a 1 standard-deviation increase in Openness is significantly associated with a 0.08-standard-deviation move in the direction of fiscal liberalism. The same increase in extraversion—with that measurement typically containing a strong dose of dominance-oriented questions—predicts a 0.12-standard-deviation move in the direction of fiscal conservatism. At similar levels of strength, people in the sample who are more Agreeable are more fiscally liberal, and people who are more conscientious or see themselves as harder-working are more fiscally conservative.

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[3] Note: since social, fiscal and tough-tender ideology were so dramatically closely related in the Tallahassee adult sample, suggesting a strong possibility that social ideology is simultaneously determined with the other two dimensions, when I later analyze that sample alone I will use two-stage least-squares and instrument for self-identified social ideology using religious attendance. For the tables currently under discussion, then, self-identified social ideology scores for the Tallahassee portion of the combined sample (but not for the student portion, the remainder of the sample) are estimates drawn from this first stage rather than the raw scores.

In table 4.3 we see the results for tough-tender ideology, which are also as predicted and in line with the notion that perceptual Categorization underlies left-right thinking. Where Openness, of the traits, was the weakest predictor of fiscal ideology (although still conventionally significant, one-tailed), now it is a powerful predictor, with a one standard-deviation increase in Openness associated with a one-fifth standard deviation increase in tender-minded liberalism, and Agreeableness, a trait well correlated with Openness (r = 0.35 in the student samples, $p = 0.0000$; ns in the adult sample), adding an additional near-tenth of a standard deviation push toward liberalism.

More important to our purposes is to bear in mind that this dimension of ideology is quite clearly, in my datasets and in those of other researchers, more closely related to fiscal ideology than to moral. Even if we did not have in hand the congruent results from table 4.2 concerning fiscal ideology, it's difficult to imagine that with Openness and Extraversion so powerfully connected in the predicted directions to tough-tender ideology, that they would be found unconnected, or connected in the opposite direction, to fiscal ideology.

Table 4.3. Tough-tender ideology, measured by issue positions, standardized. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	T	p-value (one-tailed except constant)
Big-Five Openness to Experience	-0.19** (0.048)	-4.08	0.000
Big-Five Extraversion	0.11** (0.048)	2.42	0.008
Big-Five Agreeableness	-0.08* (0.045)	-1.67	0.048
Big-Five Conscientiousness	0.07† (0.046)	1.53	0.065
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.90** (0.157)	5.73	0.000
Constant	-0.34 (.07)	-4.64	0.000
N=464, $R^2 = 0.14$			

$**p < .01$ $*p < .05$ $† p < .10$

Finally, the results for moral ideology are shown in table 4.4, where an additional covariate—religious attendance—has been added to control for the

possibility that moral ideology is not driven by psychology at all, but by religiosity. Religious attendance is measured on a seven point scale, ranging from "never" to "more than one per week" and is re-coded to range from 0 to 1. Unsurprisingly, and not particularly important for the present discussion, religious attendance is by far the most important determinant of moral ideology, such that a change of 0 (never attending services) to 1 (more than once per week) predicts nearly a one-and-a-half-standard-deviation increase in moral conservatism. But controlling for this, what else?

Perhaps the psychological results will surprise American political psychologists who are accustomed to thinking of the trait-ideology relationship in the language of Authoritarianism and religiosity. Yes, Openness is related in the expected direction to moral ideology—more Openness significantly predicts more moral liberalism—which is a considerable achievement considering we are controlling for religiosity. But the other traits add little explanatory power, and Openness itself explains moral ideology more weakly than it does tough-tender ideology, and about as strongly as it does fiscal ideology.

Table 4.4. Moral ideology, measured by issue positions, standardized. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	T	p-value (one-tailed except constant)
Big-Five Openness to Experience	-0.10** (0.043)	-2.35	0.01
Big-Five Extraversion	0.035 (0.050)	0.80	0.212
Big-Five Agreeableness	-0.06 (0.043)	-1.40	0.163
Big-Five Conscientiousness	0.015 (0.042)	0.36	0.721
Self-identified "fiscal" ideology (coded 0-1, conservatism higher)	0.669** (0.147)	4.53	0.000
Religious attendance (coded 0-1, 1=more often)	1.43 (0.12)	11.47	0.000
Constant	-0.94 (0.09)	-10.10	0.000
N=463, $R^2 = 0.28$			

**p < .01 *p < .05 † p < .10*
Note: *p* – value for Agreeableness two-tailed since there is no directional prediction.

The predictions regarding Openness are therefore mainly sustained. Openness is associated with liberalism of all kinds, net of sensible self-identification controls. If

weak perceptual categorization and the absence of strong internal mental boundaries causes the abstract and philosophical wanderings associated with Big-Five Openness to Experience, then the analysis here is suggesting that Conservatives of all stripes will share with each other the fact that they are lower in Openness and higher in Categorization strength than liberals. And if Openness (or its cognitive precursors) is, in turn, highly socially and politically consequential (as McCrae argues it is), then however empirically distinct the different dimensions of ideology are, we would expect moral, tough-minded, and fiscal conservatives to find it easier to form political alliances than for any of them to form political alliances with liberals of another ideological dimension.

As for the other traits, they also performed almost exactly as predicted by the various hypotheses, with one exception: it is a mild surprise that Conscientiousness did not significantly predict moral ideology.

Shortly we will look at idiosyncrasies of the individual datasets, but first it will be helpful to conduct a nearly identical analysis in which we substitute Ambiguity Intolerance (AI) for Openness in these equations. Let's face it: Openness to Experience, the variable most theoretically connectable to Categorization and rigid thinking, is rather weakly associated with fiscal ideology in table 4.2, as endorsers of the conventional wisdom surely will have noticed. Indeed, the coefficient is conventionally nonsignificant in a two-tailed test, and some American (but probably few European) researchers could argue that a one-tailed test is inappropriate here since there is no expectation that fiscal conservatives will be lower in Openness than liberals. Moreover, as we will see shortly when we look at individual samples, the relationship of Openness to fiscal ideology shown in this table is driven entirely by the second student sample. The zero-order correlation between Big-Five Openness and explicitly fiscal ideology is nonsignificant and near zero in both the Tallahassee and first Stony Brook samples (rs = -.01 and .01). A researcher inclined to defend fiscal conservatism as uncharacterized by relatively low Openness could justifiably dismiss this analysis as such weak evidence for a rigidity-fiscal conservatism link that it can safely be ignored.

This would be a mistake. Openness items, recall, amount largely to a measurement of how "philosophical" or even "cultured" a respondent considers himself or herself to be. The Tallahassee sample was highly educated; with many respondents drawn from professional offices, it almost certainly oversampled attorneys and other graduate-degree-holders. Such people are likely not only to regard themselves as quite abstract thinkers (however strong their perceptual categorization), but indeed education is likely to *produce* more Openness to Experience, as measured, without as strongly affecting more fundamental cognitive process variables such as categorization strength. There may be a ceiling effect in the Tallahassee sample— with many respondents, fiscally conservative and liberal alike—rating themselves as highly Open despite underlying Openness-related differences in cognitive style. Fortunately, for the Tallahassee sample, and for the second student sample, Intolerance of Ambiguity was measured in a randomly-chosen subsample half the size of the full sample.

A look back at the Ambiguity Intolerance items in table 4.1 does suggest that these items might be more independent of a person's educational experience. For example, while attaining an advanced degree might render one a self-styled philosopher, it does not necessarily mean one then wants a job with vaguely defined duties or believes that experts need not have answers to the questions they study.

Indeed, Openness is strongly and positively related to education in the Tallahassee sample ($r = 0.26$, $p = 0.006$, N = 113), and is more closely related to education than is AI ($r = -0.17$). And AI is known to be negatively and strongly related to Big-Five Openness (see Jost, et al. 2003 for the relationship between Intolerance, Openness and conservatism, especially of the moral and social variety). AI correlates with Openness in the Tallahassee sample ($r = -0.44$, $p = 0.0009$, N = 55), and in student sample 2 ($r = -0.45$, $p = 0.0000$, N = 98).

So Ambiguity Intolerance is a good substitute for Experiential Openness, and it would be a strange argument indeed that where Ambiguity Intolerance is strongly related to some variable, Openness *should* not also be, recognizing that educational effects might render its measurement poor. Let us, then, re-run the analysis of tables 4.2 – 4.4 and substitute Ambiguity Intolerance for Openness. The results are strong and as expected, and do considerable damage to the claim that the fiscal ideology-Openness finding was an accident.

Table 4.5. Fiscal ideology, measured by issue positions, standardized. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Ambiguity Intolerance	0.26** (0.085)	3.01	0.002
Big-Five Extraversion	0.038 (0.081)	0.47	0.318
Big-Five Agreeableness	0.000 (0.082)	0.00	0.998
Big-Five Conscientiousness	0.017 (0.837)	0.21	0.418
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.94** (0.167)	3.21	0.001
Constant	-0.31 (.13)	-2.32	0.022

N=155, $R^2 = 0.16$

**p < .01 *p < .05 † p < .10

For the Tallahassee (N=55) and second-student subsets (N=100), Ambiguity Intolerance is strongly and positively related to fiscal conservatism, controlling for social ideology. Curiously, the other traits lose their explanatory power for this subsample.[4] Moreover, these results are not driven only by the second student sample. The zero-order correlation between AI and fiscal ideology in the 55 Tallahassee adults who responded to Intolerance questions is r = 0.26, *p* = .026, one-tailed.

Table 4.6. Tough-tender ideology, measured by issue positions, standardized. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	*t*	*p*-value (one-tailed except constant)
Ambiguity Intolerance	0.46** (0.075)	6.12	0.000
Big-Five Extraversion	0.08 (0.071)	1.18	0.119
Big-Five Agreeableness	-0.02 (0.082)	-0.29	0.388
Big-Five Conscientiousness	-0.05 (0.075)	0.70	0.485
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.94** (0.255)	3.68	0.000
Constant	-0.36 (.12)	-3.15	0.002

N=153, R^2 = 0.32

**p* < .01 *p* < .05 † *p* < .10
Note: p-value two-tailed for Conscientiousness because signed in wrong direction.

As before, when we move from explicitly fiscal to tough-tender ideology, the results strengthen in the expected direction, at least for Ambiguity Intolerance. While again the other coefficients are reduced to nonsignificance (Extraversion, measured primarily with dominance in the Tallahassee sample, is at least suggestively positive), here a one-standard-deviation increase in Ambiguity Intolerance is associated with nearly a whopping half-standard-deviation increase in tough-minded conservatism, even netting out the effect of self-identified social ideology. Again the effect is not driven by the 98 students in student sample 2 (two of the 100 dropped out

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[4] This is consistent with other findings presented in this dissertation suggesting that the relationship between extraversion or "decisiveness" and ideology is found only inconsistently—but usually in the expected direction.

for missing data): the zero-order correlation between Intolerance and tough-minded ideology among the 55 adults is a robust 0.61, $p = .0000$ two-tailed.

Finally, table 4.7 presents the results for moral ideology, and they are exactly as expected. Net of self-identified fiscal ideology, religious attendance, and other traits, Ambiguity Intolerance performs exactly as does Openness to Experience: more *Tolerance* predicts more moral liberalism…although it's impossible not to note the relative *weakness* of AI as a predictor here, relative to its effect on secular ideology!

Table 4.7. Moral ideology, measured by issue positions, standardized. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Ambiguity Intolerance	0.14* (0.076)	1.86	0.033
Big-Five Extraversion	0.046 (0.071)	0.68	0.261
Big-Five Agreeableness	-0.095 (0.073)	-1.30	0.195
Big-Five Conscientiousness	0.002 (0.073)	0.03	0.979
Self-identified "fiscal or economic" ideology (coded 0-1, conservatism higher)	0.86** (0.249)	3.44	0.000
Religious attendance (coded 0-1, 1=more often)	1.03** (0.227)	4.54	0.000
Constant	-0.86** (.15)	-5.55	0.002
N=153, $R^2 = 0.32$			

**$p < .01$ *$p < .05$ † $p < .10$
Note: p-value two-tailed for Agreeableness because no directional prediction exists.

Traits and ideology in individual samples.

So far, based on the combined samples, there is considerable evidence that the "right" traits line up with ideology in the "right" ways. We do appear to have a personality-trait asymmetry that differentiates liberals and conservatives of the three basic ideological dimensions, and in such a way that a categorization or cognitive-rigidity theory would predict. However, some might still argue that this finding is tenuous, because, as we'll see, in the entirety of the first student sample no zero-order Openness-ideology relationship is found for *any* dimension of ideology (and there is no Ambiguity Intolerance measure to save us), while in the adult sample we had to

resort to an alternate measure of Openness to retrieve a significant relationship between the "Openness family" and one dimension of ideology—fiscal. And theoretically, we rather "hope for" this Openness-ideology finding, because it is an asymmetry along the flexibility-rigidity dimension, which we believe Openness captures, that compels Categorization theory.

I hasten to point out that I think the argument that fiscal ideology is unrelated to traits is, in fact, quite sufficiently demolished by the full-sample results already shown, and that anyway an intelligent reading of European results establishes much the same. But I suspect a powerful and stubborn strain of thought in American political psychology will predispose some to maintain I might have simply manufactured the appearance of an Openness-fiscal ideology relationship. So let us look at some curious findings in the individual samples which should help slam the door on that objection.

Student Sample 1

If we run the analysis shown in tables 4.2 – 4.4 for the entire first student sample above, the results for Openness, the trait in which we are most interested, are entirely disappointing, as seen in tables 4.8 – 4.10. Defying a good deal of previous research, and in accordance with Alford and Hibbing's (2007) pointing out the inconsistency of trait-ideology relationships, Openness apparently explains little— even for moral or tough-tender ideology.

Table 4.8. Fiscal ideology, measured by issue positions, standardized. Student sample 1 only. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Big-Five Openness	-0.066 (0.080)	-0.82	0.206
Big-Five Extraversion	0.22** (0.080)	2.76	0.003
Big-Five Agreeableness	-0.192** (0.076)	-2.54	0.006
Big-Five Conscientiousness	0.122† (0.074)	1.65	0.0502
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.57* (0.242)	2.35	0.01
Constant	-0.22† (.12)	-1.88	0.062

N=187, $R^2 = 0.12$

$**p < .01$ $*p < .05$ $† p < .10$

It is not, of course, as though no predictions at all are borne out. In fact, it is the first student sample that most strongly drives the finding that Extraversion and dominance positively predict fiscal conservatism. And although the findings are weak for tough-tender ideology, the Agreeableness-liberalism relationship is fairly inescapable here, including a finding of an unpredicted Agreeableness-*moral liberalism* link.

But the story here is the failure of Openness to perform. True, there is a hint of a relationship in the expected direction, and the p – values ranging across the tables from 0.118 to 0.356 are, probabilistically, actually more consistent with the presence than with the absence of a relationship. But the relationship is weak.

Table 4.9. Tough-tender ideology, measured by issue positions, standardized. Student sample 1 only. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Big-Five Openness	-0.097 (0.081)	-1.19	0.118
Big-Five Extraversion	0.11† (0.082)	1.34	0.091
Big-Five Agreeableness	-0.07 (0.077)	-0.91	0.182
Big-Five Conscientiousness	0.87 (0.075)	1.16	0.125
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.80** (0.247)	3.24	0.001
Constant	-0.31* (.12)	-2.59	0.010
N=187, R^2 = 0.09			

$**p < .01$ $*p < .05$ $†p < .10$

What should be noted, however, is that the relationship is only weak for the males in the sample, who because of the manner in which studies at Stony Brook are assigned to particular classes for their subject pools, dominate the sample, numbering 111 to only 72 females. Your humble author was the receptionist during the administration of the survey and indeed noticed that an inordinate number of students seemed to be drawn from an upper-level business law course. (Students indicate on a sign-in sheet for which class and professor they wish to receive extra credit in exchange for their participation.) It occurred to me that these students were (a) probably mostly males, (b) probably mostly headed for law school, which might

predispose them to regard themselves as quite "philosophical" or abstract thinkers, and (c) better educated than other students in the sample who were not in that class, again pushing them toward "artificial Openness" or high Openness measures resulting from education level rather than cognitive style.

Table 4.10. Moral ideology, measured by issue positions, standardized.
Student sample 1 only. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Big-Five Openness	-0.026 (0.071)	-0.37	0.356
Big-Five Extraversion	0.10† (0.071)	1.41	0.080
Big-Five Agreeableness	-0.13† (0.069)	-1.97	0.051
Big-Five Conscientiousness	-0.05 (0.066)	-0.77	0.444
Self-identified "social" ideology (coded 0-1, conservatism higher)	0.39† (0.267)	1.46	0.073
Religious attendance (coded 0-1, 1=more often)	1.70** (0.20)	8.63	0.000
Constant	-0.87** (0.16)	-5.46	0.000
N=187, R^2 = 0.32			

**p < .01 *p < .05 † *p* < .10
Note: *p* – value two-tailed for Agreeableness because no directional prediction, and for Conscientiousness because the coefficient signed in the wrong direction.

Furthermore, although I've neither seen nor conducted research indicating the following armchair hypothesis is true, I suspected that males are both more likely than females to think themselves "philosophical" and at any rate where they do not self-regard as such, are more likely to misrepresent on surveys how uncultured or unphilosophical they might be, especially where social demand effects exist—and who in college wants to admit to *not* enjoying philosophical discussions? Finally, I believe that among males especially, there may be an association between self-regard as highly educated and pronouncing oneself to be "socially liberal but fiscally conservative." Unscientific as it may be, this has struck me as the in-vogue self-identification of men who want to appear smart.

Having no way to single out the business law students, and suspecting males might be answering with less honesty anyway, I simply re-ran the analysis for

females only, guessing that the business law class would be relatively underrepresented among them. And the results are much more in accord with the combined sample and with expectations, and strong.

Starting with fiscal ideology in table 4.11, Openness and Extraversion perform powerfully for the females. A standard deviation more Openness is associated with a

Table 4.11. Fiscal ideology, measured by issue positions, standardized. *Females* from student sample 1 only. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient (std. err.)	t	p-value (one-tailed except constant)
Big-Five Openness	-0.33 (0.10)	-3.21	0.001
Big-Five Extraversion	0.41** (0.091)	4.44	0.000
Big-Five Agreeableness	-0.18** (0.10)	-1.77	0.041
Big-Five Conscientiousness	0.09† (0.088)	1.07	0.146
Self-identified "social" ideology (coded 0-1, conservatism higher)	1.06* (0.382)	2.76	0.004
Constant	-0.65† (.193)	-3.38	0.001
N=72, R^2 = 0.43			

$**p < .01$ $*p < .05$ † $p < .10$

third of a standard deviation more fiscal liberalism, and the same increase in Extraversion predicts 0.4 of a standard deviation additional fiscal conservatism. Agreeableness performs as with the combined sample.

These findings are strong. Are the findings for males, then, equally strong and in the opposite direction? No. While I won't waste time with a table, for the males, every trait's coefficient is nonsignificant. Openness alone is signed wrongly, but its coefficient, .028, comes with a two-tailed p – value of 0.786, entirely consistent with no effect for the males. The overall findings, it turns out, were largely disappointing *because there were so many males in the sample* and the males did not fulfill expectations. If the males are downweighted to simulate a sample balanced between 72 females and 72 males, the coefficient for Openness jumps from the 0.066, in table 4.8, to 0.123. And the p – value shrinks from 0.206 to 0.06, nearly conventionally significant.

Admittedly these sex-moderated findings smack strongly of having been cherry-picked (especially if we disregard entirely the findings of the combined sample and of a considerable body of European research). The reader's suspicions should be aroused that I might simply have tried splitting my sample by various methods, finding eventually that splitting it by sex yielded "desired" results for at least half the sample. But this hypothesis is rendered doubtful by a sample collected after this analysis was done, for a separate research project on which I am an author.

For this research project another Stony Brook sample was assembled, also by offering extra credit to participants. As it happens, a number of distracter questions were required at various points in the survey, and I inserted Openness and Extraversion series (though no other traits). Openness was measured by the questions from table 4.1 about abstract thought, looking for deeper meaning, taking the conversation to a higher level, and enjoying philosophical discussions. Extraversion was measured by 10 questions selected from the several extraversion scales especially dominance.[5] Fiscal ideology was measured using several of the questions from the surveys more central to this project—questions concerning income tax fairness, environmental regulations versus pro-business deregulation, favorability toward government help for the poor, government seeing to it that "everyone has a good job", and a government services-versus-reduced-taxes tradeoff. All traits and issue-based ideology scales were standardized as with the other analyses presented here.

The regression of fiscal conservatism on traits (and on self-identified social ideology) is shown, separated by the sex of the respondent, in table 4.12. The finding matches almost exactly what we saw in student sample 1: for women, Openness is strongly connected to fiscal liberalism. For males, Openness is unrelated. For both sexes, this time, Extraversion positively predicts fiscal conservatism.

This strongly suggests that the sex-moderated finding from student sample 1—in particular, the relationship between Openness and fiscal ideology for females only—was not an accident, nor was it the result of willy-nilly data-dredging on my part. There is something systematic afoot at Stony Brook University, something perhaps along the lines I've suggested, that interferes with the appearance of a relationship between Openness, as measured by Big Five-style questions, and ideology, in males. Part of my original armchair theorizing about the reason, however, suffers from the fact that this post-analysis sample did not draw a large portion of its students from an upper-level business law class. For this sample I do not have a record of which classes were used.

Some readers might have noticed that the coefficients for males, from both the first student sample and the post-analysis sample, are small and nonsignificant but *positive*. Does this mean that for males, high Openness to Experience is actually associated with fiscal conservatism, but only weakly, so that an extremely large male

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[5] In particular, "I get pushed around"; "I take charge"; disliking taking authority; "I win confrontations"; "I have backbone"; making decisions with confidence, letting others lead the way, challenging others' points of view, and putting others under pressure.

N would reveal this relationship? No. This proposition is untenable in light of two facts from my data in addition to the cited work of other authors. First, in the second student dataset, Big-Five Openness and Ambiguity Tolerance are both robustly and positively related to liberalism of all three dimensions for males. And second, the AI findings are so unequivocal and do not differ systematically across sexes: in fact, in Tallahassee, where Openness is unrelated to fiscal ideology, AI predicts fiscal conservatism more strongly for males than for females.

Table 4.12. Fiscal ideology, measured by issue positions, standardized. Females and Males regressed separately, from unrelated post-analysis sample. OLS regression.

Independent variable (standardized except for self-identified ideology)	Coefficient, **females** (std. err.)	*p*-value, **females** (one-tailed except constant)	Coefficient, **males** (std. err.)	*p*-value, **males** (one-tailed except constant)
Big-Five Openness	-0.26** (0.10)	0.007	0.10 (0.11)	0.406
Big-Five Extraversion	0.18* (0.11)	0.045	0.24* (0.11)	0.021
Self-identified "social" ideology (coded 0-1, conservatism higher)	1.03** (0.30)	0.000	1.14** (0.38)	0.002
Constant	-0.38** (.13)	0.002	-0.38* (0.18)	0.016
	N=80, R^2=.23		N=79, R^2=.19	

**p < .01 *p < .05 † *p* < .10
Note: *p* – value for Openness two-tailed for male subsample because signed in wrong direction.

What about tough-tender and moral ideology in sample 1? For tough-tender ideology, there is little to show, so I will skip creating a table. Controlling for "social" ideological self-placement, no trait coefficient is significant, but all four trait coefficients are in the right direction—and this is the case for both males and females. For moral ideology I will again skip the table, but with both sexes in the sample no coefficient is significant, though Extraversion is very nearly significant and positively predicts moral conservatism, an effect driven also by females.

The second student sample needs little explication on its own, as it simply and clearly follows predictions.

However, the Tallahassee adult sample was, like the first student sample, problematic for connecting traits and ideology. A closer look at it too, however, reveals that our hypotheses are mostly confirmed. The details of the Tallahassee

sample reported below are not appreciably different from what has come before, and could be skipped without much loss, but I report them in the interest of thoroughness.

This convenience sample was anything but representative of the American population generally. Of 113 participants, several dozen were surveyed in the cozy confines of a chic café in a nice downtown neighborhood, and many more were surveyed at participating professional offices.[6] The result is that the sample is more highly educated, on average, than a random sample would have been.

Also, recall that the sample looks quite different from the student samples in that the three dimensions of ideology, measured by issue positions, correlate much more strongly than in the northern samples. This "constraint" can be, at most, only partly the result of the high levels of education, as for even among the least educated third of the sample—those who indicated they'd had less than 3 years of college—the correlation between fiscal and moral ideology—the most distantly related two dimensions—was a relatively robust 0.44.

Nonetheless, despite the high correlation between ideological factors, recall that exploratory factor analysis revealed the three-factors treatment was defensible. But the high correlation between ideology factors raised a concern that, in a regression predicting fiscal ideology or tough-tender ideology, the self-identified "social" ideology covariate may well be strongly endogenous to the dependent variable. A Hausman test did not detect endogeneity for the fiscal ideology regression, but an augmented regression yielded a significant result,[7] indicating inconsistency in the OLS results and probable simultaneity.

I handle this potential problem by using two-stage least-squares regression in reporting the coefficients in table 4.13, instrumenting for self-placed social ideology, as there does exist in the survey a plausible instrument: frequency of religious attendance, measured on a 7-point scale ranging from "never" to "more than once a week" and recoded to range from 0 to 1. The variable's appropriateness benefits from obvious relationships between the moral "training" one receives at church, especially in the American south, and beliefs about moral issues such as abortion and public displays of the Decalogue, while religious training has little to do with issues of taxation or government regulation.[8] The case for its exogeneity to social ideology, which cannot be determined by a statistical test but must be made on theoretical grounds, are perhaps not airtight, but are at least as strong as for many instruments

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[6] There were, for example, two law firms and one stock brokerage, while several other participants were members of a participating local service organization whose membership consists largely of bankers.

[7] That is, the error term derived from a regression of the endogenous regressor on other regressors and its instrument is significant ($p = .04$) when included in the full OLS regression predicting fiscal ideology

[8] Zero-order correlations suggest this thinking is on-track: religious attendance correlated with self-identified social conservatism at $r = 0.55$, $p = .0000$, while remaining nearly uncorrelated with issue-measured fiscal and tough-tender conservatism, $r = .11$ and $.06$, $p = .23$ and $.51$, respectively.

used in political science research: church attendance is a more integral and socially-ingrained part of most people's lifestyles than is political self-identification along the left-right continuum, and whereas attendance at church may compel an espousal of certain moral beliefs which are recognizable as "conservative," holding those beliefs does not so strongly compel a certain frequency of church attendance.

But a plausible case can be made that an existing high level of, say, revulsion at the thought of gay marriage might drive a person to seek the company one would find at church. And so on the chance that religious attendance is not truly exogenous to social conservatism, I report coefficients both for 2SLS and ordinary OLS regression.[9]

For the regressions of ideology on traits for the Tallahassee adult sample, shown here, there are slight changes to the measurement of the traits variables from the combined samples early in the chapter. Recall that 55 respondents answered a series of Ambiguity Intolerance questions. If the resulting Ambiguity Intolerance scores are included in a scale measuring Openness with traditional Big-Five questions, Crohnbach's alpha increases—that is, Ambiguity Intolerance scales well with Openness items, so for those subjects who completed the Ambiguity Intolerance series, this measure is part of the Openness scale. Additionally, an item drawn from the Need for Closure scale, asking subjects to affirm or deny that "I enjoy questions that can be answered in many ways" also scaled nicely with "carrying the conversation to a higher philosophical level," "rarely looking for deep meaning" and being uninterested in abstract thought. I dropped the Big-Five item "I enjoy philosophical discussions" because I suspected that this item, more than any other, was measuring education rather than cognitive style, and indeed it is the only Openness-series item whose correlation with educational experience attains a conventional level of statistical significance (r=.28, $p = .001$, one-tailed). The alpha for the resulting five-item openness scale (4-item for those who did not take the Ambiguity series) was 0.67. For this analysis, Conscientiousness is measured with a single item: assessment of the accuracy of the statement "I work hard."

The Tallahassee sample benefits slightly from the instrumentation strategy, and 2SLS results conform with predictions. In table 4.13, high Openness predicts fiscal liberalism for both regressions at near-significant levels, but performs a bit more strongly when we instrument for self-identified "social" ideology.

Turning to results for tough-tender ideology, a by-now familiar pattern is beginning to emerge, and it matters little whether we look at the instrumental regression, or ordinary least squares. According to the 2-stage-least-squares results, Openness is by far the variable most closely related to opinion formation on this dimension. High openness predicts liberalism very strongly—a standard deviation more Openness is associated with a one-third-standard-deviation decrease in tough-minded conservative opinion formation. I've shown in table 4.14 the effects of

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[9] In post-regression diagnostics, the results of a Hausman specification test ($\chi^2 = 2.35$, $p = .98$) indicated that the instrument was properly excluded from the second stage regression for fiscal ideology.

income and education, because they are not inconsiderable. Higher-income individuals are more tough-minded- conservative in this sample, a minor surprise considering income and *fiscal* conservatism were statistically unrelated, while controlling for that, better-educated individuals are more tender-minded-liberal.

Table 4.13. Fiscal ideology, measured by issue positions, standardized.
Tallahassee sample only.
Two-stage-least-squares and OLS regression.

Independent variable (standardized except for self-identified ideology and Conscientiousness)	2SLS coefficient (std. err.)	*p*-value (one-tailed w/noted exceptions)	OLS Coefficient, (std. err.)	*p*-value (one-tailed w/noted exceptions)
Openness	-0.14† (0.09)	0.06	-0.12† (0.085)	0.085
Extraversion	0.04 (0.09)	0.33	.05 (0.09)	0.26
Agreeableness	-0.11 (0.09)	0.11	-0.11 (0.09)	0.11
Conscientiousness—"I work hard" (0 to 1)	0.99 (0.54)	0.035	-0.80 (0.45)	0.04
Self-identified "social" ideology (0 to 1)	1.08* (0.47)	0.01	1.35** (0.23)	0.000
Sex (0=male, 1=female)	-0.21 (0.17)	0.22	-0.19 (0.17)	0.257
	N=113, R^2=.39		N=113, R^2=.40	
	Excluded variable: religious attendance, predicting social ideology.			

**p* < .01 **p* < .05 † *p* < .10
Notes: *p* =value for sex 2-tailed. Included in the regression but not shown are the constant and controls for age, education and income, none statistically significant.

The 2SLS strategy actually seems to affect the tough-tender regression more strongly: note that the effect of self-identified moral ideology is reduced dramatically when it's instrumented using religiosity. This suggests that there was indeed endogeneity between moral ideology and tough-tender ideology—and maybe even that tough-minded conservatives in Tallahassee are culturally "socialized" to adopt morally conservative positions more powerfully than moral conservatives learn tough-minded positions. The reason is that if most of the learning consisted of moral ideologues learning tough-tender positions, the instrument should not have changed the effect of self-identified social ideology so dramatically.

Table 4.14. Tough-tender ideology, measured by issue positions, standardized. Tallahassee sample only. Two-stage-least-squares and OLS regression.

Independent variable (standardized except for self-identified ideology)	2SLS coefficient (std. err.)	*p*-value (one-tailed w/noted exceptions)	OLS Coefficient, (std. err.)	*p*-value (one-tailed w/noted exceptions)
Openness	-0.37** (0.093)	0.000	-0.30 (0.082)	0.000
Extraversion	0.027 (0.096)	0.37	0.066 (0.088)	0.23
Agreeableness	-0.05 (0.09)	0.28	-0.05 (0.087)	0.29
Conscientiousness—"I work hard" (0 to 1)	1.50 (0.55)	0.004	0.93 (0.44)	0.02
Self-identified "social" ideology (0 to 1)	0.32 (0.48)	0.503	1.12** (0.22)	0.000
Sex (0=male, 1=female)	-0.22 (0.17)	0.195	-0.17 (0.16)	0.292
Income (coded 0 to 1, from lowest to highest category)	0.83 (0.46)	0.076	0.58 (0.42)	0.169
Education (coded 0 to 1, from lowest to highest category)	-0.51 (0.34)	0.133	-0.59 (0.42)	0.07
	N=113, R^2=.37		N=113, R^2=.44	
	Excluded variable: religious attendance, predicting social ideology.			

**p < .01 *p < .05 † p < .10
Notes: *p*-value for sex, income, education 2-tailed. Included in the regression but not shown is the control for age, not statistically significant, and the constant term, ns.

I will not trouble with a table for moral ideology and report that, controlling for self-identified fiscal ideology and religious attendance (which in a regression in which they are the *only* regressors, predict moral opinion formation with $R^2 = .48$), the only trait which achieves significance is "I work hard," which predicts moral Conservatism strongly.

If it is surprising that moral ideology is not determined in the Tallahassee sample by Openness (the coefficient is expectedly negative but *p* = 0.23, one-tailed), some refuge can be taken in the fact that, among the 54 respondents who answered the Ambiguity Intolerance series, Ambiguity Intolerance alone (not Openness *per se*) does seem to positively predict moral conservatism. The same regression discussed

above, but leaving out education as a control and substituting Ambiguity Intolerance for Openness, yields a positive coefficient of 0.17 for Ambiguity Intolerance—a one standard-deviation increase in Ambiguity intolerance is associated with a 0.17 standard-deviation increase in moral conservatism, nearly significant at $p = .06$, one-tailed. But including educational attainment in the regression reduces the coefficient to 0.11, $p = .15$.

Indeed, we are now beginning to see a surprising story unfold in which moral ideology, among the dimensions of modern ideological thinking, is the *least* determined by cognitive style—even in strongly protestant Tallahassee where "closed-mindedness" is supposed to drive people to take socially conservative positions. But closed-mindedness only lives up to its reputation regarding social ideology if social ideology is defined so as to include tough-minded, but *not* moral, issues—clearly an unreasonable approach. For a final illustration, the zero-order correlations between AI and the three dimensions of ideology in the Tallahassee sample are $r_{AI\text{-moral ideology}} = 0.27$, $p = 0.023$, $r_{AI\text{-fiscal ideology}} = 0.33$, $p = 0.007$, and $r_{AI\text{-tough-tender ideology}} = 0.58$, $p = 0.0000$, all one-tailed tests. AI may be related to moral ideology, but it's a relatively weak relationship, even in the Bible Belt where it should be strong.

Conclusions about traits and ideology

What do we take away, then, from the asymmetries presented in this chapter? Principally, that liberals and conservatives *do* differ by personality traits—Big-Five-type traits at that—and, more particularly, that they differ in ways that would be predicted if they also differed in the strength by which they categorize the world, and that the differences hold across three distinguishable dimensions of left-right thinking.

If liberals are weaker categorizers, then liberals should also be higher in trait Openness to Experience. The evidence across three datasets indicates that they almost certainly are—and that this applies separately to fiscal, tender-minded and, probably least of all but still significantly, moral liberals. This difference alone suggests that we may be on the right track searching for cognitive foundations of various dimensions of ideological thinking in cognitive-rigidity measures such as C-strength. The relationship of Openness-family measures to tough-tender ideology—ideas about harshness toward undesirables and toward other nations—is especially strong. This could be because these are easier issues—hence a cognitive style which saw the "other" as more different, or quite mechanically linked errors with punishment, or which was predisposed to view the legality of someone's presence in the U.S. as the beginning and end of all notions relevant to his treatment, would have little problem translating such a manner of thinking into a concrete policy position. On the other hand, translating an "open" cognitive style into a more abstract fiscal ideology is perhaps not quite as straightforward. There is the directness of the effort-reward link, yes, but with fiscal ideology the individual and his just deserts are not always front-and-center—there are abstract issues about the appropriateness of taxation, the size of

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government, and private-versus-public provision of public goods, so perhaps mapping a cognitive style onto fiscal ideology is a "noisier" process in which more is lost in the translation.

The weakness of the Openness-moral ideology relationship is at first surprising, but we will see evidence later on that perhaps an "open" style of thinking operates a bit differently for moral ideologues. Moral conservatives may not *perceive* the world in much sharper categories than do liberals. However, as we will see, they appear to *crave* the certainty of such a categorizing perspective—a "need for certainty" that Jost and colleagues made much of, and to desire it in their leaders.

Just conjecturing, this could be because their most salient model of a leader is often a clergyperson, who is professionally charged with having absolute answers to difficult questions, or because an even more overarching leadership model is God himself, the ultimate disambiguator. What this amounts to is a model of moral conservatives as displaying "closed-mindedness"—if that's what it is—that is more *manufactured* than perceptual. Something has driven some people to *seek* a certainty that may not always have come naturally, and this seeking may drive people into the arms of religion, and in turn into a political identification as morally conservative. Fiscal and tough-minded conservatives, after all the data is presented here, will seem to come by their higher levels of certainty more easily.

Moving to other traits, there is good theoretical reason to think strong categorizers—conservatives—will be more assertive, decisive, and dominant, and should have higher Extraversion scores. Extraversion appears to be related to ideology, but this relationship is more inconsistent. It is observable in the first student sample with regard to fiscal and tough-tender ideology, especially among women. It is signed in the right direction for fiscal and tough-tender ideology in the second student sample, but only significant for tough-tender opinion formation. Extraversion is only significantly related to moral ideology among women in the first student sample, and is nonsignificant in the combined samples, so it appears that assertiveness is, if at all, only very weakly related to moral ideological thinking.

Agreeableness performed weakly, but as expected. High Agreeableness predicts fiscal and tender-minded liberalism—an apparent compassion-for-others effect. This is plausibly related to Categorization based on the theory that compassionate Agreeableness is driven by an inability to categorically distinguish self, or in-group, from other. In the combined sample, there is a suggestion that Agreeableness might predict moral liberalism too, but this relationship was inconsistent across samples, and did not attain significance even in the full dataset. The safest assumption for now is that, holding constant other forms of ideology, moral conservatives and liberals are probably not meaningfully different in their levels of compassion or general approachability.

Finally, high Conscientiousness unsurprisingly predicts conservatism of various dimensions.

In sum, it is clearly worth pursuing a more purely cognitive difference variable that could both produce these trait asymmetries and explain why liberals and conservatives output the opinions they do.

But taken by themselves, do traits alone provide support for one of the major hypotheses of this dissertation—that the different strains of conservatism, and the different strains of liberalism, are *not* political allies of temporary modern convenience, but are natural psychological siblings? Only under one condition. For a moment, let us suppose that the findings regarding Openness are all we have at hand. Would this be sufficient to claim that the "natural allies" hypothesis is supported? It could, after all, be argued that *any* randomly selected psychological measure that happens to separate fiscal, tough-tender, and moral liberals from conservatives has a blind probability of .25 of placing them all on the same end of its dimension, even if the three dimensions of ideology are psychologically unrelated. And if we allow that fiscal and tough-tender ideology operate largely as one dimension, moral conservatives have a .5 probability of sharing with secular conservatives low levels of Openness, even if Openness has absolutely nothing to do, and path-dependent happenstance everything to do, with their political alliance.

This means that if the Openness results are all we have in hand—and they are indeed much of what we have *so far*—then support for the natural-allies hypothesis requires that we believe there is *something special about Openness* that binds people together in a way that other traits do not. We must, that is, agree with McCrae that Openness has more powerful social consequences than any other trait. McCrae provides considerable evidence to support this notion and is recommended reading, but for now it is necessary to caution that based on traits alone, this strong assumption is required to maintain the natural-allies hypothesis.

I now turn to other asymmetries between liberals and conservatives that have apparently not one thing to do with politics.

Chapter 5

Asymmetries, part 2: Behavioral differences with absolutely no obvious connection to politics

Research is dull, hard work, and should certainly not be too much fun. So I apologize in advance for this chapter, in which I test a long list of entertaining hypotheses claiming that liberals and conservatives are different in multiple ways that have ostensibly nothing to do with political opinions.

Because this kind of material—"Do liberals really do this? Do conservatives really do that?"—inevitably generates sparks of excitement, especially late at night over a bottle of good, spicy Cabernet, this chapter may not carry the sufficiently grave feel we associate with serious research. Do not be fooled: the asymmetries found, taken together, paint perhaps a clearer picture of what it means to be liberal or conservative than much of the more abstract research conducted here, especially for those whose goal is to *understand* liberalism and conservatism deeply, rather than simply to document quantitatively whether one poorly understood scale relates to another.

Admittedly, the asymmetries were concocted using somewhat circular thinking. For the idea is to present a wide array of nonpolitical asymmetries between liberals and conservatives of multiple dimensions (including the trait asymmetries of the last chapter), and then "discover" a cognitive process variable that has the potential to explain them all. But, of course, the asymmetries I hypothesize to exist are so hypothesized precisely because I have in mind this cognitive process variable, and are based thereupon. What this means is that, for all I know, additional behavioral asymmetries between liberals and conservatives, which I would never have thought of, might well be driven by some cognitive process difference I've also never thought of. But my suspicion is that, as we encounter them, it will strike the reader that these particular differences really do quite a stunning job of summing up much of what we pick up on when we say liberals and conservatives just "seem different."

The strategy I follow is this: at first, we will see whether a behavioral test differentiates liberals and conservatives. Usually, I will then investigate the asymmetry further, including asking whether the test is also related in the expected way to categorization strength, traits, or cognitive process variables also hypothesized to be part of the categorization-cognitive rigidity/flexibility phenomenon. For the impatient, at the end of chapter 6 a gigantic table sums up all the asymmetries found in chapters 4 through 6, and the null or "wrong-direction" findings too. (For purposes of brevity, I do not always discuss behavioral asymmetry-categorization strength correlations in the body of the chapters, so this table is a backstop indication of whether such a connection was found.)

Most of the asymmetries presented here were tested in the first student sample, whose members took a survey designed primarily to reveal them. Sometimes replications were attempted in later samples. The methods are simple: typically,

correlation or OLS regression is used, with minimal controls. The idea is to amass a pattern of relationships, even if only correlational, which point toward something deeply cognitive. For each hypothesis, I will introduce the predicted relationship between a behavior and political ideology, explain theoretically why a liberal-conservative difference in categorization strength might cause the predicted behavioral asymmetry, and then discuss the test or tests conducted.

One of the most interesting things to notice is that, although categorization strength lies in theory behind all of the hypothesized asymmetries, it seems that many asymmetries are related to secular or moral ideology, but often not to both. This is the next episode in the unfolding story of how moral and secular ideology apparently operate on distinguishable but related psychologies. To the hypotheses, then.

H1: A preference for gathering socially with students of one's own major as opposed to students of other majors is associated with conservative thinking. This is a specific instance of the more general hypothesis that a preference for spending time with people who are more like oneself *in nonpolitical ways* is associated with conservative thinking.

Theory: Obviously, if one were to ask conservatives and liberals whether they would prefer to "hang out" with conservatives or liberals, it's a trivial prediction that each kind would rather hang out with like others. (Although the logic to follow suggests liberals would *still* be more interested in hanging out with conservatives than vice-versa).

But the hypothesis at hand asserts that conservatives are more likely than liberals to prefer the company of people who are more like them even when the likeness has nothing whatsoever to do with politics. Categorization theory predicts this simply on the grounds that one of the most frequently used types of categorization is person categorization. Once a "target person" is perceived as belonging to a different category (different social group), a degree of interpersonal difference is felt by the perceiver toward the target. Strong perceptual categories with sharp boundaries facilitate the perception that the members of that other group are more categorically different. To the extent that anyone, then, prefers to spend time with more rather than less similar people, strong categorizers should demonstrate this preference most strongly. Moreover, to the extent that strong categorization is associated with a thinking style that seizes on the most obvious, salient, and pertinent facts and draws the most obvious conclusions while ruling other possibilities out, strong categorizers should think hanging out with similar people an obvious preference not worthy of reconsideration, and, given a choice, make the obvious one.

Test strategy: Stony Brook students from sample 1 were first asked whether they would prefer to attend a party with members of their own major, or with members of a particular other major—that is, the other major was named. The other major was not always the same one, but was chosen randomly from a list of majors that were chosen in an informal attempt to balance them between stereotypically conservative (business, for example) and stereotypically liberal (the arts, the

humanities) majors. This was done to minimize the chances that, say, a found preference on the part of conservatives to party with their own major would not be hiding a truer preference *not* to party with a stereotypically liberal major—say, crunchy ecologist types.

Students chose between five responses, ranging from a strong preference to be with their own major to a strong preference for the other major. Reponses were re-coded so that preferences for spending time with members of one's *own* major are higher.

Let us first observe whether different dimensions of ideology are correlated with participants' responses. Table 5.1 shows that all three of the major dimensions of concern—fiscal, tough-tender, and moral—do appear related to a preference for same-major socializing in the predicted direction. (Tough-tender here is a combination of nativistic and military ideology in student sample 1.)

As moral ideologues seem most prone to the effect, the astute reader will wonder whether the entire preference is driven by moral ideologues who have learned to take the "correct" positions on secular issues. The answer is no: each dimension independently shows the relationship. This is demonstrated by performing ordered logit regression of the same-major preference on multiple dimensions simultaneously. If the relationship of, say, fiscal ideology with same-major preference is driven by the fact that some of the fiscal ideologues are merely moral ideologues who've learned the proper fiscal-ideology positions, including moral ideology in the regression should reduce fiscal ideology's coefficient to near zero and nonsignificance. Table 5.2 shows three separate ordered logits: same-major preference regressed on fiscal and moral ideology together, on tough-tender and moral ideology together, and on all three together.

Table 5.1. Correlations of (A) preference for socializing at a party with members of one's own major over members of a (randomized) particular other major with (B) dimensions of ideology. (N = 178)

Ideological dimension (conservatism higher)	Pearson's r with same-major preference	Two-tailed significance level
Fiscal ideology	0.14	0.06
Tough-tender ideology	0.19	0.01
Moral ideology	0.26	0.0004

When fiscal and moral are included together, moral ideology is obviously still related to the preference quite strongly. Its presence in the regression does reduce the magnitude of the fiscal ideology coefficient, but not so far as to support a claim that fiscal conservatives are just as willing as fiscal liberals to socialize with people unlike them. And when we regress the same-major preference on tough-tender ideology,

which, recall, is considerably more closely related to fiscal ideology than to social, the presence in the regression of moral ideology does little damage: tough-minded conservatism still predicts the preference at conventional significance levels. When all three are included, all three coefficients are still signed in the same direction.

Table 5.2. Preference for going to a party attended by members of one's own major rather than members of a particular other major, ordered logit, three separate regressions

Independent variable	Logit coefficient	Std. err	p – value, two-tailed
Ordered logit 1			
Fiscal ideology	0.213	0.148	0.152
Moral ideology	0.487	0.148	0.001
N=178, pseudo R^2 = .035			
Ordered logit 2			
Tough-tender ideology	0.296	0.145	0.040
Moral ideology	0.471	0.148	0.002
N=178, pseudo-R2 = .04			
Ordered logit 3			
Fiscal ideology	0.135	0.155	0.385
Tough-tender ideology	0.259	0.150	0.088
Moral ideology	0.455	0.151	0.002
N=178, pseudo-R2 = .04			

I have left myself open to the criticism that the "other" majors were not scientifically established as balanced between stereotypically liberal and stereotypically conservative. But I also asked students whether they'd prefer to attend a party with members of their own major versus a party composed of a *mixture* of other majors. Here there were four rather than five response options, eliminating the middle, neutral position as I considered it too inviting. The correlation of ideological dimensions with responses to this question is shown in table 5.3.

The directions of the coefficients are the same, and once again the relationship of same-major preference with moral conservatism is robust, while the other two relationships have become somewhat weaker. It may be a clue to the nature of tough-tender ideology that its relationship with same-major preference has weakened so severely that it's now become weaker than that of fiscal ideology: tough-minded ideology seems *outgroup-focused,* and there is no named outgroup here.

Table 5.3. Correlations of (A) preference for socializing at a party with members of one's own major over a party with a mixture of majors with (B) dimensions of ideology. (N = 184)

Ideological dimension (conservatism higher)	Pearson's r with same-major preference	Two-tailed significance level
Fiscal ideology	0.11	0.14
Tough-tender ideology	0.09	0.22
Moral ideology	0.22	0.003

Table 5.4. Preference for going to a party attended by members of one's own major rather than a party with a mixture of majors, ordered logit, three separate regressions

Independent variable	Logit coefficient	Std. err	p – value, two-tailed
Ordered logit 1			
Fiscal ideology	0.19	0.137	0.156
Moral ideology	0.34	0.148	0.021
N=184, pseudo R^2 = .02			
Ordered logit 2			
Tough-tender ideology	0.17	0.138	0.207
Moral ideology	0.34	0.148	0.021
N=184, pseudo-R2 = .02			
Ordered logit 3			
Fiscal ideology	0.16	0.144	0.279
Tough-tender ideology	0.13	0.145	0.388
Moral ideology	0.33	0.149	0.028
N=184, pseudo-R2 = .02			

A re-run of the ordered logit analysis (table 5.4) again leaves all coefficients in the right direction, but indicates that when the other party attendees are not all out-group members, tough-tender ideology is a rather weak performer.

Ultimately, a preference for spending time with members of one's own major appears to be related to all dimensions of conservatism, but most convincingly with moral conservatism.

H2. Conservative as opposed to liberal thinking will be associated with regarding fans of unliked sports teams as *less likable people*.

This hypothesis simply argues that if we ask individuals how likable they regard people of another group (especially if that group is in some competition with the individual's own group), even when that other group is not a political group, people who are more conservative will be more likely to dislike members of the outgroup. Like the previous hypothesis, this is based on theory claiming that the stronger we categorize people (presumably at preconscious levels), the more unlike us and unfamiliar outgroup members will seem.

Table 5.5. Correlations between ideology and thinking fans of a rival sports team are less likable than fans of one's own favorite team, student sample 1.

Ideological dimension	Pearson r with thinking fans of other team *less* likable	One-tailed p–value (because outgroup-derogation conventionally associated with conservatism)
Fiscal ideology	0.21	0.008
Moral ideology	0.09	0.15
Tough-tender ideology	0.16	0.035
Military ideology	0.23	0.005
Self-identified general liberalism-conservatism (conservatism scored higher)	0.21	0.012
Self-identified "fiscal / economic" liberalism-conservatism (conservatism scored higher)	0.13	0.065
Self-identified "social" liberalism-conservatism (conservatism scored higher)	0.04	0.32

I tested this hypothesis by first asking respondents whether they were sports fans. Those who responded "no" skipped the remainder of the test and are not analyzed here. Those who answered "yes," were then asked to name their favorite sports team. Next, they were asked to name this team's major rival. Finally, inserting into the question wording the names of the teams they'd given, they were asked whether fans of this rival team were (1) a good deal less likable than fans of their favorite team, (2) a little bit less likable, (3) exactly as likable, or (4) even *more* likable than fans of their favorite team.

Presumably, being a fan of the New York Yankees or the Boston Red Sox is primarily a function of which city one calls home, and businesspeople, artists,

academics, blue-collar workers, all types are perfectly well represented among the fans of every professional and college sports team under the sun. On the other hand, present in this test is a degree of intergroup competition that does not exist between college majors.

The results are shown in zero-order correlation form in table 5.5, and confirm the hypothesis for ideological thinking in all dimensions except moral ideology, for which the correlation coefficient is signed correctly and approaches, but does not attain, conventional significance.

Note that this sports-related form of in-group favoritism is generally more closely related to ideological *thinking* than to self-identification, doing damage to a counter-theory that would claim that conservatives like to think themselves more rabid sports fans as part of an overall conservative self-image.

H3. Conservatives perceive inequality in relationships more than liberals do, even where little or no information indicates a relationship is unequal.

C-theory would be consistent with such a finding since perceptually weak categorization would make judgments about people's relative positions as superior and subordinate difficult. This hypothesis was tested by showing subjects the cartoon depiction, seen in figure 5.1, of two men walking on the street next to each other. Note that the cartoon contains virtually no information that would imply that the two men are unequal.

Figure 5.1. "The two men"

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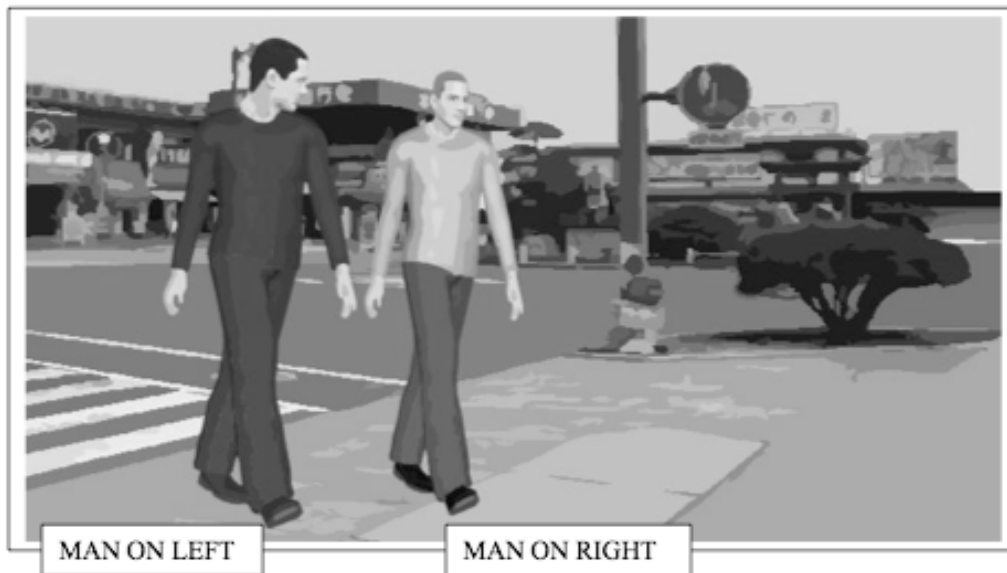
Subjects were invited to indicate, using 5 response options, whether (1) it was clear that the man on the left was the superior, (2) it appeared, but was not clear, that the man on the left was the superior, (3) it appeared the two men were equals in the relationship, or (4 and 5) the relationship favored the man on the right, either suggestively or clearly. Responses were folded such that 0 indicated equality and 1 indicated maximum inequality, with *either* man the superior.

Based on what would seem to be a near-complete absence of diagnostic information in the picture, do conservatives perceive inequality more than liberals? In the first student sample, moral conservatives do, but other dimensions of ideology appear unconnected to this perception, as shown by the zero-order correlations in table 5.6.

Table 5.6. Pearson correlations of tendency to see inequality between two men in picture and ideological dimensions, measured by issue positions, student sample 1.

Ideological dimension	Correlation with tendency to see inequality in relationship	*p-value*, two-tailed
Fiscal	-0.04	0.62
Moral	0.17	0.018
Military	0.01	0.86
Tough-tender	-0.03	0.67
N = 185		

Attempt at replication: In student sample two, I attempted to replicate this result, and the outcome is quite interesting (see table 5.7). Again, conservatives see a dominance relationship more than liberals do, but whereas moral conservatives saw a dominance relation in sample one, this time it is fiscal and tough-minded conservatives who do so more strongly, while moral conservatives only nonsignificantly do (unless measured by self-identification, in which case the Pearson coefficient reaches significance.)

Moreover, the measure of categorization strength used for most of the analysis of student sample 2[1] strongly predicts performance on this item: strong categorizers—participants who click in the boxes the most often and the least often on the category-separating line—are more likely to see a dominance relationship between the two men, $r = 0.27$, $p = 0.0003$, N = 166. This suggests an informal path model in which strong categorization affects fiscal ideology by first causing individuals to "see hierarchy" regardless of whether it exists.

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[1] called "Categorization$_{tough-tender}$"; see chapter 7 for more on this measure.

Table 5.7. Pearson correlations of tendency to see inequality between two men in picture and ideological dimensions, measured by issue positions, student sample 2.

Ideological dimension	Correlation with tendency to see inequality in relationship	*p – value, two-tailed*
Fiscal	0.19	0.012
Moral	0.07	0.40
Tough-tender	0.17	0.026
Self-identified "social" ideology	0.15	0.046
Self-identified "fiscal" ideology	0.075	0.34
Self-identified general "liberalism-conservatism"	0.22	0.006
N = 163		

Furthermore, seeing the two men as unequal is also strongly related in student sample two to lower levels of "deliberative complexity," the integrative-complexity-related measure of cognitive process I will discuss in depth in chapter 8 (r = -0.28, *p* = 0.0006). It appears that seeing a dominance relationship where one is not even intentionally implied seems related not only to categorization but also to a very straightforward style of reasoning in which one main cause leads mechanically to one effect (as opposed to complex situations yielding more difficult-to-explain outcomes).

Attempt at replication in Tallahassee sample: The "two men" item was administered to 50 participants from the Tallahassee sample, with null results for all dimensions of ideology, so the effect is not always achieved. Correlations with ideological dimensions were all in the wrong direction, but small: -0.03 for tough-tender, -0.08 for fiscal, and -0.12 for moral.

H4: Conservatives more than liberals will see, in a photograph of people giving a presentation to others, hierarchy, *i.e.,* that the presenters outrank their audience, rather than seeing the presenters and audience as members of the same group.

Participants from student sample 1 were shown the photographs in figure 5.2, depicting a small group of people standing in front of a larger group in a seminar-type setting. Participants were asked to decide, within 20 seconds, "what best describes the people you see?" With two response options: "TWO groups of people, one group "leading" and the other group "following"; or "ONE group of people, with some of its members sharing something with others."

Figure 5.2. "The presentation."

The prediction is, of course, that since conservatives categorize more than liberals, and since this categorization is predicted to lead to perceptions of hierarchy, that conservatives will see leading and following as being implied by a situation where hierarchy could be, but is not necessarily, present.

From student sample 1 a large subset of N = 135 participants answered the item, and while conservatism was positively correlated with "seeing hierarchy" using all issue-position-based dimensions, all the correlations (with fiscal, tough-tender, military and moral) were lower than 0.06 and none approached significance. We do nonetheless have this: *self-identified* fiscal conservatism was associated with seeing hierarchy, r = 0.22, *p* = 0.01. This one significant correlation alone, among several nulls, tells us little, except possibly to suggest that people who consider themselves fiscally conservative might have perceived the situation in more "corporate boardroom" terms.

However, the item was included again for 52 participants from student sample 2. This would have been an "attempt at replication" had there been anything to replicate. But in the second case, the result is more interesting, as the correlations of table 5.8 show.

Here, it does appear conservatives see hierarchy more strongly than liberals do, especially tough-minded and moral conservatives. Moreover, the perception is at least suggestively connected with several psychological variables in the "right" direction: people seeing hierarchy were less Open to Experience (r = -0.17, *p* = 0.23 two-tailed), more Ambiguity-Intolerant (r = 0.28, *p* = 0.05 two-tailed), and stronger categorizers (r = 0.24, *p* = 0.08 two-tailed).

Table 5.8. Pearson correlations of tendency to see hierarchy in presentation and ideological dimensions, measured by issue positions, student sample 2.

Ideological dimension	Correlation with tendency to see hierarchy	$p-value$, 2-tailed
Fiscal	0.18	0.20
Tough-tender	0.36	0.008
Moral	0.38	0.004
N = 52		

Replication in Tallahassee sample: The "presentation" item was administered to a 58-subject subsample of the Tallahassee adults. The results this time constitute a clean replication of Stony Brook's student sample 2, with correlations shown in table 5.9. Seeing hierarchy in the photos is also in this sample significantly and positively correlated with categorization strength (r = 0.27, p = 0.019), and ambiguity intolerance (r = 0.33, p = 0.049), and negatively related to deliberative complexity (r = -0.25, p = 0.026) and Experiential Openness (r = -0.32, p = 0.006).

Table 5.9. Pearson correlations of tendency to see hierarchy in presentation and ideological dimensions, measured by issue positions, Tallahassee adult sample.

Ideological dimension	Correlation with tendency to see hierarchy	$p-value$
Fiscal	0.19	0.085
Tough-tender	0.24	0.036
Moral	0.35	0.003
N = 58		

All significance tests one-tailed, since test is a replication attempt

Based on the "presentation" item, then, and also on the "two men" item, while relationships are sometimes strong and sometimes weak, the broader pattern isn't hard to read. It does appear that Conservatives of various types see hierarchy more readily than liberals do, even where it's barely or not at all implied, and that this tendency is related to categorization strength and to psychological variables measuring cognitive flexibility-rigidity.

H5: Conservatives relative to liberals tend to drive the same route between two points A and B, while liberals are more likely to take different routes from day to day.

This is all about a hypothesized effect of cognitive rigidity: going for "the obvious" versus an interest in the less known or nonobvious. If demonstrated, this could very plausibly be a categorization-related effect: "the way home" is either a particular thing represented sharply and categorically, or there is no categorical definition of what "the way home" is. So do conservatives and liberals differ on this item?

The evidence here is not overwhelming, but *fiscal* conservatives and liberals probably do differ. People who differ in their moral or tough-tender ideological thinking do not significantly differ. Subjects were asked, simply, "Which best describes you?" and saw the following four response options:

1. When driving, I find the shortest route between two places, and I always take that route.
2. I usually take the same route, but not always.
3. I often take different routes between 2 places, but I have a main route I prefer.
4. It sometimes seems that I never take the same route between the same two places!

Ordered logit was performed, using sex as a control covariate, separately for each dimension of ideology, to see whether ideology explained answers to this question. All coefficients were in the "right" direction—i.e., were negative indicating that conservatism is associated with "lower" answers—but only fiscal ideology significantly predicts answers to the question, as shown in table 5.10.

Table 5.10. Self-description as driving a different versus the same route between two places each time (different routes=higher-numbered responses), ordered logit, student sample 1.

Independent variable	Ordered logit coefficient	Std. error	p – value, one-tailed
Fiscal ideology, standardized	-0.28	0.146	0.023
Sex (0=male, 1=female)	-0.36	0.28	0.205

N=183, Pseudo-R2: 0.011

Two things are worth mentioning here. First, this is likely an Openness-related effect. That is, taking the same route between two places is probably related to, or is a result of, the same cognitive machinery that produces variance in the trait Openness to Experience. A bivariate ordered logit predicting answers to this item using Experiential Openness yields a significant result ($p = .025$, one-tailed, N=183). And if this test is a proxy measure for Openness, then it helps to reveal what the traditional

FFM Openness series did not: that fiscal ideology is at least related to Openness-*style* variables for males in student sample 1, for whom the relationship between fiscal ideology and same-route driving is *stronger* than for females (for females alone, the coefficient is signed in the right direction but smaller and nonsignificant). Moreover, the test is weakly related in the predicted direction to one of the three categorization tests given to subjects in student sample 1—tendency to categorize objects as appliances or not-appliances was correlated with driving the same route every day, $r = 0.21$, $p = 0.06$ two-tailed, $N = 82$.

The second thing to note is that, of the ideology measures, the weakest predictor of this test was moral ideology—perhaps a surprise to some political psychologists who consider moral conservatism the ideological output of a closed or rigid mind. However, this pattern is by now familiar. Moral conservatives may be more "closed minded" in certain ways than moral liberals are, but when we use more abstract cognitive rigidity measures as opposed to heavily culture-infused pseudo-ideology scales (such as Openness and Ambiguity Intolerance), the conventional wisdom simply falls apart.

H6. Conservatives will evince higher levels of Need For Nonspecific Closure than liberals.

Need for Closure (NFC; Kruglanski and Webster, 1996) is conceptualized as "a desire for definite knowledge" and also as being comprised of two general tendencies, an "urgency" and a "permanence" desire—or "seizing and freezing" as the authors call it. There are numerous found effects for the variable, including attribution, a phenomenon I will explore in the pages that follow, and, yes, political behavior—right-wing German party membership (Kemmelmeier 1997) and Authoritarianism (Jost et al. 1999).

That this motivation would be positively associated with conservatism is certainly an easy prediction to make if we are claiming that conservatives are characterized by higher levels of perceptual Categorization strength.

Or is it? If someone perceives the world as strongly categorized, does this leave them with a "need" for closure, or have they already *got* closure? This question begs another: to what extent does "need for closure" measure a need for something that is lacking, versus measuring something that should perhaps be called instead, "tendency to *have* closure"?

The results of my test of this hypothesis are fascinating and revealing. First, in the asymmetry-seeking survey administered to the first student sample, the various questions drawn from Kruglanski, *et al.*'s scale did *not* scale together particularly well. Exploratory factor analysis did reveal three discernible separate factors of need for closure which themselves do not make for scales with very impressive alphas, but do make intuitive sense. The first factor, which I call "closure/ambiguity intolerance" ($\alpha = 0.48$) is composed of questions about (a) a preference for interacting with people who hold different opinions from one's own, (b) disliking unpredictable situations, (c) preferring, when dining out, familiar restaurants, (d) and disliking questions that

can be answered in many ways. It seems to tap something very similar to Ambiguity Intolerance: it is a preference for, a comfort with—maybe even a need for—the known and the predictable. The second factor, which for obvious reasons I call "closure/info-seeking" ($\alpha = 0.45$) is composed of two questions: (a) wanting to know why an event occurred, and (b) wanting to know what other people are thinking. This factor, which seems to tap the "urgency" or "seizing" concept, is just barely significantly correlated with the first, $r = 0.15$, $p = .04$, N=187. The third factor, which I call "closure/decisiveness" ($\alpha = 0.36$) is composed of three items: (a) making decisions quickly, (b) easily seeing the right and the wrong side to things, and (c) finding it "annoying to listen to someone who cannot make up his or her mind." This factor appears to tap less a *need* for closure than the possession of an inherent ability to see things clearly, and as quite closed already. This factor is uncorrelated with the other two ($r = 0.02$ with both other factors).

Table 5.11 presents zero-order correlations between dimensions of ideology and dimensions of need for closure. All dimensions of ideology are correlated in the "right" direction with all NFC dimensions. The first dimension, measuring discomfort with the unknown, significantly predicts moral ideology—in the predicted direction, so that moral conservatives need more closure—but no other dimension. The second dimension predicts only military ideology, while the third dimension—decisively *possessing* closure, the one uncorrelated with the other two—predicts conservative thinking more generally.

Table 5.11. Correlations of "Need for Closure" dimensions and ideological dimensions, measured by issue positions, student sample 1

Ideological dimension	r with "closure / ambiguity tolerance" (one-tailed p –value)	R with "closure / need to know" (one-tailed p – value)	r with "closure / decisiveness" (one-tailed p –value)
Fiscal ideology	0.03 (0.33)	0.03 (0.70)	0.13* (0.04)
Moral ideology	0.18* (0.008)	0.07 (0.16)	0.15* (0.018)
Tough-tender ideology	0.08 (0.13)	0.05 (0.24)	0.12* (0.045)
Military ideology	0.02 (0.38)	0.13* (0.05)	0.18* (0.007)
Combination of tough-tender and military ideology ($\alpha = .62$)	0.05 (0.26)	0.12 (0.054)	0.19* (0.005)

*$p < .05$

Again we see a pattern in which a certain measure of cognitive rigidity—in this case seeing the world in "closed" ways, perhaps as already categorized—is associated with fiscal and tough-minded conservatism, while a *desire for* more of this quality is more associated with moral conservatism (although here, moral conservatives appear both to crave *and* possess this level of closure). At any rate, whether it's a desire for cognitive closure, or the possession of it already, liberals of various dimensions never seem to want it, have it, or to be in any way associated with it, relative to conservatives.

Not incidentally, the relationships between closure and ideology are generally stronger for policy-position dimensions than for self-identification. The strongest correlation between a closure dimension and a self-identification dimension is between closure/ambiguity intolerance and self-identified "social" ideology, r = 0.14, *p* = 0.02, one-tailed. No other self-identified ideological dimension is significantly related to any closure dimension, all of which strongly suggests that what's happening is *not* that conservatives, recognizing that they are conservative, depict themselves as closed-minded in order to fulfill some sort of cultural expectation, but that a latent cognitive style which generates NFC measurements also produces ideological thinking.

H7. Conservative thinkers are less persuadable than liberal thinkers.

Theory is obvious here: weak categorization means concepts are vulnerable to invasion from contradictory considerations. To test for this, a "persuadability" scale was constructed from five questions written by myself, in the format of FFM trait questions, and appeared intermixed with trait questions. On 5 response-option points from "very inaccurate" to "very accurate" subjects indicated whether the following statements described them:

> Even if I have an opinion, a well-written argument often gets me to change my mind.

> I'm darn proud of the opinions I hold. Good luck trying to convince me I'm wrong.

> Even after I've made up my mind about something, I am always willing to consider a different opinion.

> My values are the same as they were 5 years ago, and I don't see anything changing.

> I am very interested in the reasoning of people who hold different views than mine.

The index only yielded a Crohnbach's α of 0.53. Nonetheless, "persuadability" predicts holding liberal opinions and liberal self-identification in various dimensions. Zero-order correlations between persuadability and ideology measured in various ways are shown in table 5.12.

One of the most interesting aspects of these correlations is the relative weakness of the correlation between *self-identified* fiscal ideology and persuadability. Actually *thinking* in a fiscally conservative way, as I have defined it by the issues I've selected, is strongly associated with being unpersuadable. But evidently, there are enough persuadable people who *call themselves fiscal conservatives,* even though their opinions do not bear them out, to knock the self-ID correlation to nonsignificance. I interpret this as an illustration of how, in modern America, there is social pressure on educated people to declare themselves "fiscally conservative"—as it seems to mean, informally, something like "against runaway wasteful government"—a description which I suspect, had I asked it as an issue-position question, would not have fetched a lot of variance.

Table 5.12. Correlations of persuadability with ideological dimensions.

Ideological measurement (conservatism higher)	Pearson's r	p – value, one-tailed
Fiscal ideology by issue positions	-0.31	0.0000
Moral ideology by issue positions	-0.12	0.046
Tough-tender ideology by issue positions	-0.21	0.002
Military ideology by issue positions	-0.29	0.0000
Self-identified liberalism-conservatism	-0.21	0.002
Self-identified *fiscal* liberalism-conservatism	-0.11	0.075
Self-identified *moral* liberalism-conservatism	-0.08	0.13
N=187, except general liberalism-conservatism, N=176		

Yet another interesting thing to consider is whether persuadability itself is a pretty decent proxy for Openness to Experience. Recall that Openness in its classic FFM form failed to differentiate liberals from conservatives in the first student dataset. But for those who cling to the null result of the first student dataset to support an argument that fiscal conservatives are "just as open as liberals," I suggest that surely persuadability could be counted as a facet or a component of an "Open" mind—if not the core of the definition thereof. Openness and Persuadability correlate at r = 0.24, p = 0.001 in this dataset. If persuadability is related to Openness, then the result shown in table 5.12 should slam the door quite authoritatively, and again, on this stubborn argument.

And third, it's just as interesting to note that, while moral ideologues do seem to live up to the prediction—yes, moral conservatives are less persuadable—this

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result is yet again the weakest of the bunch. This is hardly resounding support for the notion of a "Christian right" that's tenaciously rigid in its unbending allegiance to ideas carved in stone or beyond the reach of argumentation on any issue. Christian conservatives are surely unyielding regarding their *religious* beliefs, but as a general cognitive style, the data for a cognitively rigid moral right continue to roll in as relatively weak.

Before moving on, however, a little more exploration of the persuadability results is in order. First, because the alpha for the persuadability index was only mediocre, could it be that the entire relationship between persuadability and ideology is driven by just one or two items in the index? The answer is an assured no: measured by issues, fiscal, tough-tender and military ideology are each related in the "right" direction to every question in the scale, and moral ideology is related in the right direction to four of the five questions.

Next, although the zero-order correlations strongly imply the following counterargument is false, some might suggest that fiscal conservatives appear less persuadable at least partly because "social" conservatives are less persuadable, and these social conservatives have learned to be fiscally conservative. Or, less obviously, perhaps fiscal conservatives are less persuadable because they are more (or less) politically knowledgeable, which in turn could lead to less persuadability, or because they are more likely to be male, and males are unpersuadable, or because they're more religious.

To test for this, I simply regress persuadability on fiscal conservatism (issue-position-measured) along with these threatening covariates. This is *not,* strictly speaking, a causal model I present. The model represented in this regression has fiscal conservatism "causing" persuadability, when in fact the model argued for in this dissertation is that persuadability is getting close to a measure of cognitive rigidity which causes conservatism. Rather, this regression simply answers the question of whether the covariance shared by fiscal ideology and persuadability is accounted for by something else. If not, then there would appear to be something about persuadability that relates more directly to taking certain positions on fiscal issues.

When I control for "social" ideology, I will go the extra mile: I will use both purely moral ideology *and* tough-minded ideology as another possible measure of "social" conservatism, even though in chapter 2 we already saw that this dimension of ideology is more closely related to fiscal ideology. If fiscal ideology survives this test, too, then I would suggest that a persuadability-fiscal ideology relationship becomes quite difficult to deny, at least in this dataset.[2]

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[2] I have to allow, however, one last competing possibility, which fiscal conservatives might be so bold as to argue for: perhaps it's not unpersuadability, or the cognitive style associated with it, that produces fiscal ideology. Perhaps it is simply "being right" that produces fiscal conservatism—i.e., fiscal conservatives are right about things, and fiscal liberals are wrong about things (Ann Coulter's recent talk at Stony Brook University was entitled "Liberals are wrong about *everything*"!)—and, in turn, when one is flat-right about everything, there is little need to be persuaded. This

The OLS regressions are shown in table 5.13. It's quite clear that fiscal conservatism has a negative relationship with persuadability that's not merely a product of moral ideology or even tough-minded conservatism, and the relationship is quite strong: A one-standard-deviation increase in fiscal conservatism does not "cause" as discussed above, but is *associated with* a person's being nearly a third of a standard deviation less persuadable. Equally important is that the relationship between tough-tender ideology and persuadability survives the powerful control for fiscal ideology (the coefficient would be significant at $p < 0.05$ in a one-tailed test, which would be appropriate here).

Table 5.13 Dependent variable: persuadability index, standardized. OLS regression.

Regressor	Coefficient (std err)	t	p – value, two-tailed
Fiscal ideology (by issue positions, standardized)	-0.27** (0.073)	-3.68	0.000
Moral ideology (by issue positions, standardized)	-0.06 (0.08)	-0.70	0.486
Tough-tender ideology (by issue positions, standardized)	-0.14* (0.073)	-1.89	0.061
Respondent sex	-0.27* (0.147)	-1.85	0.066
Political knowledge (0 to 1)	0.53* (0.26)	2.01	0.046
Authoritarianism (0 to 1)	-0.19 (0.20)	-0.93	0.292
Religious attendance	-0.01 (0.27)	-0.25	0.962
N=183, $R^2 = 0.17$			

**$p < 0.001$, * $p < 0.07$

dissertation, however, declines to address itself to this possibility. I would only suggest that fiscal conservatives willing to argue this position should explain the strong correlation between persuadability and Experiential Openness, and in particular how "being right" is facilitated by a refusal to think about things philosophically or abstractly.

Again, in a surprise for some, perhaps, the coefficient for purely moral ideology is nonsignificant, though still in the right direction. (Is it still a surprise, though?) Moreover, removing Authoritarianism from the regression does *not* re-establish the statistical significance of moral conservatism, nor even does its coefficient change very much (from -0.058 to -0.067).

Finally for those wondering whether "military" ideology would survive the same controls as fiscal ideology did, the answer, not shown in a table, is yes, with a negative coefficient of -0.23, $p = 0.006$. Tough-minded ideology, especially closely related to military ideology, does not in turn survive the control for military ideology, but still has a negative coefficient. In sum, it appears that fiscal, military, and tough-minded conservatives, in that order of strength, are less persuadable than liberals on those same dimensions, and net of any mutual influences.

Finally, in this first student dataset, the persuadability index correlated significantly with the failure to categorize—that is, with weak categorization strength—and particularly with the categorization of food as healthy or unhealthy, $r = -0.30$, $p = 0.002$ one-tailed, N = 86. The correlation was in the right direction but nonsignificant for the other two categorization tasks in the first student sample.

H8. Liberals and conservatives differ on what kinds of essays they find more compelling, with liberal thinkers, relative to conservative thinkers, finding an essay that is more "integratively complex" more compelling.

A subset of student sample 1 was asked first whether they agreed that it's "best to keep a clean house"—a relatively uncontroversial idea. Those who agreed then read two separate essays, authored by me, which were intended to endorse this idea. The order in which the two essays were presented was randomized. One of the two essays was constructed to embody high "integrative complexity"—a concept utilized by Tetlock (1983) to analyze the speech of liberal and conservative politicians. Language with high integrative complexity (IC) expresses ideas while recognizing multiple perspectives and integrating those perspectives in a sophisticated manner. Meanwhile, the other essay was designed to have low integrative complexity but to match the high-IC essay approximately for length. The low-IC essay was written as a straightforward laundry-list of highly tangible reasons for keeping a house clean with little integration of reasons and without competing perspectives. It read as follows:

> The reasons for keeping your house clean are obvious. You can find things more quickly. There are fewer germs, so it's healthier. Obviously, it smells better. In fact, if you leave a bunch of dishes in the kitchen sink, it's unsanitary and gross. The same goes for leaving unwashed clothes in the dirty-clothes hamper. So dirty houses tend to smell as bad as they look. Guests will think more highly of you if you keep your house looking immaculate. It's

embarrassing for people to see that your house is dirty. If you have children, you're setting a good example by keeping it looking nice. If you never let your
house get too dirty, you don't have to work as hard to clean it up later. Your carpet lasts longer if you vacuum it regularly, and keeping grit off of hardwood
floors keeps them from getting scratched. Cleaning out your refrigerator makes
room for new, fresher food. How many people let stale food sit in their refrigerator past the spoil date? If you don't clean your bathtub regularly, you'll get soap scum that is almost impossible to remove, so that's a no-brainer. I could go on, but it's almost a silly question. Keeping your house clean is clearly better than letting it become a mess.

The high-IC essay described the effects of a clean house as being less unambiguously or categorically positive, and at the same time as more intangible, while integrating various perspectives in addition to a simple, cleanliness-is-better-than-dirtiness perspective, such as a spiritual-effects perspective, and even a modestly contrary perspective:

> The real benefits of a clean house aren't as obvious or as straightforward as you might think. Sure, a clean house is, well, *cleaner*, but the more important effect of a clean house is the effect it has on your mind. A clean house lifts your spirits, while at the same time it stays out of your way, leaving you undistracted from the more important things in life; for example, instead of fretting over a mess, you can spare more attention for your children, or to think about a project at work, or to do a hobby, to be creative. A clean house, in this sense, actually lets you live life to a fuller extent. But there are other, deep psychological advantages, too, which have to do with the actual act of cleaning the house. Letting the house get out of hand is never good, but letting enough of a mess accumulate so that you have to spend some time cleaning it can offer a sense of accomplishment and the recharge of a "fresh start." In this way, cleaning up fits nicely into the natural human—indeed universal—rhythm of waking and sleeping, tension and relaxation, birth and rebirth, and so keeps us feeling fresh and ready to tackle the next challenge.

Respondents were asked after reading the essays which of the two was the more persuasive, responding on a five-point scale allowing them to rate either essay as strongly or only moderately more persuasive, or the two essays as equally persuasive. The two essays were seen by respondents as, overall, about equally persuasive, with 42% finding each essay at least somewhat more persuasive, and 16% finding them equally persuasive.

The prediction is that liberals of various dimensions will prefer the high-IC essay relative to conservatives. Table 5.14, containing zero-order correlations, shows

that they do, if we're measuring by issue positions in the moral and tough-minded dimensions, and a relationship with fiscal ideology is somewhat suggested too.

Table 5.14. Correlations of preference for high-integrative complexity essay with ideological dimensions. Student sample 1.

Ideological measurement (conservatism higher)	Pearson's r	p – value, one-tailed
Fiscal ideology by issue positions	-0.10	0.16
Moral ideology by issue positions	-0.24	0.01
Tough-tender ideology by issue positions	-0.21	0.02
Military ideology by issue positions	0.05	0.59
N=96 Note: p – value two-tailed for military ideology since r signed in wrong direction		

Furthermore, being a tough-minded conservative and being morally conservative are, net of each other's influence, independently related to preferring the less integratively complex essay, as shown by the ordered logit of table 5.15.

Table 5.15. Preference for more integratively complex essay, ordered logit coefficients.

Independent var.	Ordered logit coefficient	Std. error	p – value
Moral ideology by issue-positions	-0.55**	0.20	0.003
Tough-tender ideology by issue positions	-0.34*	0.20	0.044
Respondent sex (0=male, 1=female)	-0.45	0.42	0.282
Political knowledge (0 to 1, 1=more knowledge)	-1.34	0.75	0.072

N = 92, pseudo-R^2 = 0.048
Note: p – values one-tailed for ideology variables, two-tailed for sex and knowledge.

**$p < 0.01$, * $p < 0.05$

I do find it a little surprising that the political knowledge covariate suggests that higher levels of knowledge are associated with a preference for the *low*-IC essay, but that indeed is what the results imply.

It remains to discuss how this nonpolitical asymmetry might relate to categorical thinking, but it's almost too obvious to mention. Those who perceive the world in strong categories would see "reasons why" as tightly connected to (in the same category with) outcomes. The more integratively complex argument presented reasons for keeping a clean house which were anything but tightly-connected to the concrete notion of cleanliness. These reasons—improving one's spiritual life and so forth—are for many not in the same "compartment" or "category" with "cleaning house." Hence, this asymmetry, like many others, is consistent with a view that conservatives see the world in sharper categories. However, it also stands on its own as an indication that not only politicians, as Tetlock found, but ordinary conservative thinkers, along the moral and tough-tender dimensions, may think in less integratively complex patterns. Elsewhere in this study using different types of IC-measurement items, we will be able to add fiscally conservative thinkers to that list.

H9. Ideology in its multiple dimensions is related to the type of romantic partner one prefers.

While it's easy to connect mate preferences to categorical thinking, I think the greatest understanding is to be gained by treating this hypothesis more "broadly." What I mean is that a "narrow" treatment of this hypothesis would utilize C-theory to specify exactly which traits in a mate should be preferred by liberals versus conservatives: like should prefer like in a mate, hence conservatives should want categorizing mates, while liberals should desire fuzzy thinkers.

As it turns out, some of this dynamic is detectable in the presentation to follow, but the relationship between ideology and mate preference is more complicated than that, and it would be a mistake to miss out on some of the findings that C-theory might not necessarily have predicted. In particular and most importantly, it was not originally anticipated (though perhaps it should have been) that the relationship between ideology and mate preference would be sex-moderated. But in some samples, it appears that such is the case. Much is to be learned from reflecting on how ideology and mate preference are related in different ways across the sexes. So we will take as our broader hypothesis, then, that mate preference and ideological thinking are related, and look, one-sex-at-a-time, at the data to see not only whether this hypothesis is supported or nullified, but whether an interesting *picture* emerges from the relationships we find.

In student sample 1, a small subset of subjects (48 men and 23 women) was selected into the mate-preference question series. In student sample 2, another small subset was selected randomly, 68 participants (39 men and 29 women)[3]. Each

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[3] Not every item was administered to every subject in the second student sample in order to shorten the survey, and items were dropped from the survey randomly for

participant was asked, "When you find yourself attracted to a potential mate, how likely is it that he/she is…" followed by a personal description, such as "…someone who's absolutely certain about what they believe?" Each item came with four response options: "very likely", "somewhat likely", "not that likely", and "downright UN-likely". 14 different personal descriptions were created by the author, mainly designed to reflect classic Big-Five-type traits as well as theoretically possible consequences of strong or weak cognitive categorization, such as forms of decisiveness or general rigidity. This means 14 different items, randomized in their presentation, asked subjects how likely it was they'd be attracted to someone fitting these descriptions:

1. Rugged and tough
2. Gentle and soft-minded
3. Interested in philosophical conversation
4. Assertive when dealing with others
5. Stern and unyielding toward people who've made mistakes
6. Kind-hearted and sympathetic
7. Trusting of others, even though they sometimes get taken advantage of
8. Someone who keeps their house immaculately clean
9. Someone who works incredibly hard
10. Someone who wears a military or police uniform to work
11. Someone who's absolutely certain about what they believe
12. Someone who's decisive and doesn't change their mind easily
13. Someone who's interested in art
14. Someone who's never late.

I'm sure readers can think of other traits they'd like to see tested, and so can your author. But these are the ones chosen for this study, and in some cases they are revealing. (In others, confusing.) Because the subsamples were small, and because some of the correlations that looked promising in sample 1 did not appear in sample 2, the samples are combined for analysis. Note that no military-specific dimension of ideology emerged in sample 2, so sample 1's military and tough-tender dimensions are summed to one dimension so that the samples can be combined with three dimensions each. All ideological dimensions were standardized, and the combined-sample ideology measures also have mean 0 and standard deviation 1. We can now inspect the zero-order correlational results, separately for men, women, and both sexes together, in table 5.16.

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each participant. The N therefore changes slightly for each item (typically about three-fourths of the sample was exposed to any one item), with a consequent small effect on the calculated p – value.

Table 5.16. Pearson Correlations: Attraction to various person types as a mate with ideological dimensions. Student samples 1 and 2 combined.

Attraction to…	Ideological dimension	Pearson r for men (*p* – value)	Pearson r for women (*p* – value)	Pearson r for whole sample (*p* – value)
Someone who is rugged and tough	Fiscal ideology	-0.07 (0.55)	-0.04 (0.77)	-0.15 (0.10)
	Moral ideology	-0.03 (0.74)	0.20 (0.19)	-0.07 (0.47)
	Tough-tender ideology	**-0.22*** **(0.06)**	-0.04 (0.77)	-0.15 (0.11)
Someone who is gentle and soft-minded	Fiscal ideology	0.11 (0.33)	-0.07 (0.65)	0.07 (0.48)
	Moral ideology	0.17 (0.16)	**-0.48*** **(0.002)**	-0.01 (0.88)
	Tough-tender ideology	0.02 (0.88)	-0.11 (0.51)	-0.01 (0.96)
Interested in art	Fiscal ideology	-0.08 (0.51)	-0.19 (0.23)	-0.06 (0.51)
	Moral ideology	-0.03 (0.81)	0.02 (0.91)	-0.01 (0.93)
	Tough-tender ideology	-0.10 (0.40)	-0.18 (0.26)	-0.10 (0.29)
Interested in philosophical conversation	Fiscal ideology	-0.01 (0.96)	-0.13 (0.38)	-0.02 (0.80)
	Moral ideology	-0.21 (0.08)	0.15 (0.32)	-0.06 (0.50)
	Tough-tender ideology	-0.16 (0.19)	**-0.33*** **(0.03)**	**-0.23*** **(0.015)**
Assertive when dealing with others	Fiscal ideology	**-0.34*** **(0.003)**	-0.12 (0.44)	**-0.32*** **(0.0004)**
	Moral ideology	-0.19 (0.11)	-0.00 (0.98)	-0.16 (0.07)
	Tough-tender ideology	-0.15 (0.20)	-0.09 (0.57)	-0.15 (0.10)

Table 5.16, continued

Stern and unyielding toward people who've made mistakes	Fiscal ideology	-0.05 (0.65)	**0.36*** **(0.02)**	0.05 (0.55)
	Moral ideology	0.16 (0.19)	**0.56*** **(0.0001)**	**0.26*** **(0.003)**
	Tough-tender ideology	-0.05 (0.66)	**0.43*** **(0.005)**	0.11 (0.22)
Kind-hearted and sympathetic	Fiscal ideology	**-0.32*** **(0.006)**	-0.26 (0.10)	**-0.29*** **(0.001)**
	Moral ideology	0.07 (0.51)	0.08 (0.63)	0.06 (0.50)
	Tough-tender ideology	**-0.32*** **(0.005)**	**-0.29*** **(0.07)**	**-0.29*** **(0.002)**
Trusting of others, even if sometimes taken advantage of	Fiscal ideology	0.09 (0.45)	-0.14 (0.37)	-0.00 (0.98)
	Moral ideology	0.10 (0.43)	-0.26 (0.10)	0.06 (0.53)
	Tough-tender ideology	-0.05 (0.64)	-0.27 (0.08)	-0.15 (0.11)
Someone who keeps house immaculate	Fiscal ideology	0.03 (0.82)	0.28 (0.20)	0.13 (0.28)
	Moral ideology	0.21 (0.15)	0.26 (0.23)	**0.26*** **(0.02)**
	Tough-tender ideology	**0.46*** **(0.001)**	0.24 (0.28)	**0.31*** **(0.006)**
Someone who works incredibly hard	Fiscal ideology	-0.03 (0.79)	-0.17 (0.30)	-0.16 (0.09)
	Moral ideology	-0.07 (0.54)	0.09 (0.59)	-0.08 (0.38)
	Tough-tender ideology	-0.02 (0.88)	-0.22 (0.17)	-0.05 (0.55)
Someone who wears a uniform to work	Fiscal ideology	0.03 (0.78)	0.03 (0.82)	-0.00 (1.00)
	Moral ideology	0.03 (0.77)	0.09 (0.58)	0.06 (0.53)
	Tough-tender ideology	0.04 (0.70)	0.01 (0.94)	0.02 (0.80)
Someone who's certain about beliefs	Fiscal ideology	-0.01 (0.91)	-0.22 (0.17)	-0.16 (0.10)
	Moral ideology	-0.04 (0.71)	0.07 (0.63)	0.01 (0.91)

Table 5.16, continued

	Tough-tender ideology	-0.18 (0.14)	-0.15 (0.35)	**-0.18*** **(0.04)**
Someone who's decisive and doesn't change mind	Fiscal ideology	-0.18 (0.13)	0.19 (0.25)	-0.13 (0.17)
	Moral ideology	-0.11 (0.31)	0.13 (0.43)	-0.06 (0.51)
	Tough-tender ideology	-0.17 (0.16)	0.03 (0.83)	-0.08 (0.41)
Someone who's never late	Fiscal ideology	0.16 (0.13)	0.11 (0.42)	0.00 (0.99)
	Moral ideology	-0.06 (0.59)	0.13 (0.37)	-0.06 (0.50)
	Tough-tender ideology	0.08 (0.46)	0.11 (0.42)	0.11 (0.19)

The results are a little disappointing; there are a lot of nonsignificant correlations in the table. But there are quite enough highly significant ones that their existence is unlikely to be the result of chance or a fishing expedition for significant correlations. Let us first consider results for which both sexes "agree."

Tough-minded conservative males and females seem to "agree" that they are seeking a mate who is less interested in philosophical conversation than tender-minded liberal males and females are. Combined with the nonsignificant but same-direction difference in seeking an artistic mate, it certainly appears tough-minded conservatives are less interested in an Experientially Open mate. Moreover, tough-minded conservatives are much less interested than tender-minded liberals in having a kind-hearted mate, and value more than liberals someone who keeps a clean house. In what is quite a surprise to me, tough-minded conservatives seem to be seeking a mate who is *less* certain of their beliefs! While a "need for certainty" is probably more easily associated with moral conservatism than tough-minded, it's still surprising that a conservative of any kind would prefer an uncertain mate. Are the tough-minded seeking a *compliant* mate—someone whose beliefs they can bend to their own desires? I cannot be sure.

Fiscal ideologues show a congruent pattern with tough-tender ideologues on one kind of mate preference: fiscal conservatives, both men and women, are not as interested in a kind-hearted mate as fiscal liberals are. Moreover, if desire for a philosophical and an artistic mate are combined into one measure of desire for an "Experientially Open" mate, controlling for sex, fiscal conservatives generally (men combined with women) weakly but significantly likewise want a less open mate than fiscal liberals do (partial r = 0.15, p = .044 one-tailed).[4] Morally ideological men and

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[4] Interestingly, the control variable, sex, shows that females nearly-significantly want a less open mate than males do.

women are congruently different on one single mate-preference item: both morally conservative men and women seem to value a mate who keeps a clean house more than moral liberals do.

Possibly the items on which the sexes differ are a bit more interesting. Among tough-tender ideologues, conservative men are less interested in someone who is "rugged and tough" than liberal men are, but women don't seem to differ. Although this finding is rather weak, it parallels some other findings in the data and so seems possibly a real effect: for example the tougher-minded conservative *women* are far more interested in a man who is "stern and unyielding" toward those who've made mistakes than tender-minded liberal women, while the tough-minded *men* show no preference for female sternness. It begins to appear that among the tough-minded ideologues, the "perfect match" is a stern man with a more delicate (i.e., less rugged) woman—possibly a more "traditional," obvious, or socially idealized relationship description—note that both men and women conservatives on the tough-tender dimension want a clean-house-keeper, but the men desire this a good deal more strongly.

Among fiscal ideologues, males and females seem likely to differ in their preference for an assertive mate. Fiscally liberal males are significantly more interested in an assertive woman than are fiscally conservative males. But among females, the difference between fiscal liberals and conservatives is nonsignificant and much smaller. Paralleling this finding, and just as with the tough-tender ideologues, fiscally conservative females are much more interested in a "stern and unyielding" partner than are fiscally liberal females, but the fiscally conservative and liberal men do not differ on this mate preference. Again, fiscal conservatism seems connected to an idea about relationships in which the man is more unyielding (strong, silent type?) and the woman less assertive.

Among moral ideologues, there is an intuitively similar finding about strong men and—what? perhaps compliant?—women, but it seems to draw on different items. Morally conservative women are far, far less interested in a "gentle and soft-minded" mate than morally liberal women are. But morally conservative *men* are nonsignificantly *more* interested in a soft and gentle-minded woman. Morally conservative men *nearly* significantly prefer a less "assertive" woman than liberal men do, while conservative and liberal women don't differ in their preference for assertiveness. Female moral liberals and conservatives differ wildly, however, in their preference for a "stern and unyielding man," with conservative women much more likely than liberal women to want this in a partner. Conservative men don't significantly differ from liberal men in this mate preference.

One of the most interesting findings among these somewhat disappointing results is that moral conservatives and liberals don't appear to differ in their preference for kind-hearted mates—moral conservatives very, very slightly but nonsignificantly prefer the kind-hearted mate more than moral liberals do. But the other dimensions of ideology reflect a strong difference between left and right. Tough-minded and fiscal conservatives aren't nearly as interested in kindheartedness among their mates as their liberal counterparts are. It might also be a mild surprise for

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some that, although the general pattern has conservatives less interested in Experientially Open partners than liberals, this relationship is *weakest* among moral ideologues, of the three dimensions.

In summary of the Stony Brook student results, then, all three kinds of conservatives seem to lean, more than liberals, toward mate preferences that would guide conservatives toward relationships characterized by a strong male and a less strong or even compliant female. This certainly would be consistent with, if not a traditional, then perhaps more accurately a more *stereotypical* type of relationship—one which a strong categorizer would be likely to have in mind when he or she thought about "what a relationship looks like." But possibly categorization effects might be less interesting than what we learn generally about liberals and conservatives here. First, it's good to note that liberals and conservatives *do not* differ in many preferences. But where they do, fiscal and tough-tender ideologues differ primarily in how kind-hearted a mate they seek, and also in how Open-minded a mate they seek, while moral ideologues differ considerably in how orderly a house they'd like their mate to keep.

Replication attempt: In a later Stony Brook student sample collected for a different project, a few of the mate-preference questions were administered to 70 students as distracter questions. Also, a small number of issue items were administered, allowing for the creation of fiscal and moral ideology dimensions.

The philosophical-mate and artistic-mate questions were again combined to form a "preference for an Experientially Open mate" measure, and this measure again negatively predicted fiscal conservatism[5] among a combined male-and-female sample, r= -0.25, p = 0.015, one-tailed. As opposed to the first two datasets, this time the same measure also negatively predicted moral conservatism, r = -0.31, p = 0.004 (one-tailed). This time, morally conservative men *and* women indicated preferences for stern (r = 0.26, p = 0.02) *and* assertive (r=0.26, p = 0.02) partners—confirming the stern finding from the first two samples (especially for women), but disconfirming finding that fiscally liberal men preferred more assertive women.

As for other, typically tough-minded issues, preference for an "Open" mate predicted liberalism on the death penalty and multilateral foreign policy, r = 0.24, p = 0.04 and r = 0.38, p = 0.001 for those two issues respectively. Support for the death penalty was also associated with preference for a "certain" mate who "seldom changes his or her mind," r=0.28, p = 0.02. Support for English-only laws was nonsignificantly and negatively related to preference for the Open mate, r = -0.17, p = 0.16. Males and females of this sample differed only in their preference for a kind-hearted mate, with both morally and fiscally conservative males behaving like the conservatives of the previous two samples in significantly preferring a less kind-

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[5] Fiscal ideology was an additive scale measured by four items, tapping support for government's helping the poor, government intervening in the economy, a public-versus-private health care system, and support for taxing the rich to redistribute income to the poor.

hearted mate than liberal males, while female conservatives nonsignificantly performed differently in preferring kinder-hearted males than liberal females.

Table 5.17. Correlations of mate preferences with ideology dimensions, Tallahassee Sample. 27<N<32, except never-late mate, N=49. Boldface = $p < 0.10$ or r > 0.25.

Preference for…	Fiscal ideology	Tough-tender ideology	Moral ideology
Rugged mate	0.24 (0.19)	0.20 (0.29)	**0.30** **(0.10)**
Gentle, soft-minded mate	-0.13 (0.51)	0.05 (0.80)	-0.02 (0.89)
Mate interested in art	-0.16 (0.42)	-0.09 (0.65)	-0.23 (0.24)
Mate interested in philosophical discussion	-0.03 (0.88)	**-0.27** **(0.18)**	-0.15 (0.45)
Assertive mate	**0.35** **(0.05)**	**0.27** **(0.14)**	0.12 (0.51)
Stern and unyielding mate	**0.36** **(0.03)**	**0.40** **(0.02)**	0.14 (0.43)
Kind-hearted and sympathetic	**-0.28** **(0.13)**	0.08 (0.68)	0.15 (0.43)
Trusting mate	**-0.28** **(0.15)**	-0.10 (0.60)	-0.17 (0.38)
Immaculate house-cleaning mate	**0.28** **(0.14)**	**0.29** **(0.12)**	-0.03 (0.88)
Hard-working mate	0.24 (0.18)	**0.43** **(0.01)**	**0.44** **(0.01)**
Uniform-wearing mate	-0.07 (0.70)	0.17 (0.36)	0.23 (0.20)
Certain-of-beliefs mate	**0.32** **(0.07)**	**0.38** **(0.03)**	**0.51** **(0.003)**
Decisive and mind-unchanging mate	**0.31** **(0.09)**	0.21 (0.27)	0.09 (0.61)
Never late mate	**0.24** **(0.09)**	**0.43** **(0.001)**	**0.27** **(0.06)**

Significance tests all two-tailed

Before moving on from mate preferences, let's look at the results of the same items from the Tallahassee Adult sample. For this sample, a very small subset was randomly selected to complete the mate-preference items, with a random subset of items administered to each participant who was thus selected, resulting in item-

specific Ns ranging from 27 to 32 (except for the "never late" item, which 49 subjects completed, due to an idiosyncrasy in the survey design). Table 5.17 reports the correlations for the full-sample, not sex-separated due to small N.

The Tallahassee sample resembles what probably the more "classic" expectations would be, if there were any classic expectations for mate preference differences between left and right ideologues—especially for moral ideologues. Indeed, Southern moral conservatives may be of a different sort than northern ones. Here, moral conservatives appear to prefer a mate who is more "certain" of his or her beliefs—a finding that only weakly emerged among northern students. They also clearly prefer a more "conscientious"-seeming mate, something that did not strongly emerge in the Stony Brook sample. That is, moral conservatives, relative to moral liberals, clearly prefer a mate who is on time (not "never late") and who is hard-working. The tough-minded from Tallahassee also prefer, just as strongly, this conscientious person more than the tender-minded do.

Meanwhile, the tough-tender and the fiscal dimensions resemble each other in their preference for assertiveness, sternness, and ruggedness in a partner—a sensible alignment of preferences that looked much more confused in the Stony Brook sample (where conservatives more than liberals seem to have preferred both sterner *and* less assertive partners), and which follows more closely expectations that "decisive" conservatives will prefer decisive or assertive partners. Kind-heartedness didn't replicate northern results strongly, but at least fiscal conservatives from the south are suggestively less interested in a kind-hearted and less trusting partner.

In the Tallahassee sample, there are some sex-differences, but with such a tiny N, it's hard to know how much to make of them. Liberal women (all dimensions) relative to conservative women seem to strongly prefer a kind-hearted mate, while conservative men prefer a kind-hearted mate more than liberal men do. And conservative women seem, relative to liberal women, to prefer a less Open mate. The combination of interested-in-art and enjoys-philosophical-discussions is correlated with fiscal ideology among 22 women at $r = -0.23$, $p = 0.30$; with tough-tender ideology at $r = -0.44$, $p = 0.04$; and with moral ideology at $r = -0.49$, $p = 0.02$. Among 19 men, these ideology-Open mate correlations are all positive and nonsignificant.

Summary

What, ultimately, can we say about ideology and mate preferences? Perhaps this is too little data to overcome the considerable confusion in the findings. And yet there are far too many regularities and fulfilled expectations to sustain a claim that I've just plucked a few significant correlations out of random noise. In the north, we have some consistency. Tough-minded and fiscal conservatives are less interested in a kind-hearted mate than liberals are, and across all samples seem more willing to take for a partner someone who is stern and unyielding—a finding that was sex-moderated in the north, but not in Tallahassee. It's also very difficult to argue, across all the samples, against the notion that conservatives seem less interested in a mate who appears high in Experiential Openness. Liberals, who we've found are more Experientially open, want similar partners.

As for my original prediction that conservatives would prefer a more decisive, assertive and certain mate, someone who is less willing to change his or her mind—and this would have been a categorization-related effect—the two regions may demonstrate a cultural difference here. While the Tallahassee sample was very small, there's little question that in this sample conservatives relative to liberals do want a more assertive, certain, less mind-changing mate—with moderate differences across the three dimensions. Meanwhile, the findings for these variables among Stony Brook students were mostly null, and pointed, if at all, weakly in the direction of conservatives wanting *less* extraverted mates. And a similar finding emerged for conscientiousness-related mate descriptions. In the North, liberals and conservatives showed little difference. In Tallahassee, tough-minded and moral conservatives strongly prefer orderly, hard-working mates, relative to liberals, and fiscal conservatives want the same, a bit less strongly, relative to fiscal liberals.

I believe the largely hinted-at effects in these small and idiosyncratic samples call loudly for a standalone study of ideology-related mate preferences. I invite the reader to stare at these tables for a while and find his or her own patterns.

H10. Conservatives and liberals will differ in the traits of the kinds of friends they would rather have, such that the conservatives more than liberals will tend to choose friends whose traits bespeak a more categorizing cognitive style.

If in some cases males and females show an across-sex asymmetry in the relationship between ideology and mate-preference—for example, if conservative men might want less assertive women than liberal men do, while the reverse is true for conservative and liberal women—then perhaps in selecting a *friend*, such an asymmetry would be less likely. In selecting a friend, it might be more likely that, male or female, a more assertive, open, or orderly friend would always be predicted to choose as a friend someone more similar.

A fairly large subsample (N=112 of the total 187) of the first student sample was administered a series of dichotomous questions in which they were asked simply to choose which person they'd rather have for a "good friend," each a forced-choice item with no "neither" option available. With the categorizing/conservative choices underlined for theoretically obvious reasons, the choices were between a good friend who…

1. (a) <u>is able to make up their mind decisively</u>, or (b) is always willing to revisit their opinions;
2. (a) is extremely intelligent, or (b) <u>shares my same beliefs</u>;
3. (a) is extremely talkative going on and on about things, or (b) <u>is stoically silent, expressing themselves in one- or two-word phrases</u>;
4. (a) is talented at music, or (b) <u>is talented at sports</u>;
5. (a) is a great writer of poetry and essays, or (b) <u>is a strong leader who gets people's attention</u>;

6. (a) is extremely forgiving of other people's faults, or (b) <u>doesn't take any flak from anybody</u>;

7. (a) <u>is extremely dependable to do what they say they'll do</u>, or (b) is comforting to you when you're having a tough time; and

8. (a) <u>always keeps a neat, well-groomed appearance</u>, or (b) considers spending time on grooming to be a lower priority. (Prediction based on Conscientiousness more than categorization strength.)

Table 5.18 shows the zero-order point-biserial correlations between dimensions of ideology and the dichotomous items.

As with mate preferences, there are plenty of null coefficients. However, if one were intent on maintaining that friend preferences are unrelated to ideology, then under a null expectation of pure noise, the fact that 31 of 32 correlations are in the right direction would have to give one pause. (The exception is the extreme lower right cell.)

It's hard to escape the appearance that conservatives, relative to liberals, prefer to be friends with sports talents rather than artists, people who share their same beliefs rather than merely being intelligent, are decisive and dependable, and less talkative, "strong silent" types who take less flak from others. Generally, conservatives seem to prefer, well, *tougher* company.

As it turns out, there are a couple of interesting sex differences worth noting. Among men, fiscal conservatives significantly prefer a more decisive and less talkative friend at fully significant, not just near-significant, levels (rs = 0.23 and -0.28, ps = 0.03 and 0.01, one-tailed), while among women, fiscal liberals and conservatives don't differ very much on these items. And among females, moral conservatives significantly prefer friends who share their same beliefs over intelligent friends more than do liberals ($p = 0.02$), even after controlling for church attendance in a logit analysis not shown here.

Given the large number of null correlations, how much stock should we place in the notion that liberals and conservatives seek friends with different traits? Since there is at least some congruence between the friend and mate results—with conservatives generally favoring the tougher companionship—and since the friend preferences do seem driven somewhat by the same traits that were earlier found related to ideology (I won't go into detail, but wanting an intelligent friend is significantly correlated with Openness, and wanting a sports talent for a friend is significantly correlated with Dominance and Conscientiousness), it seems likely that further research and a larger N would confirm that an asymmetry does exist—and one for which cognitive rigidity such as perceptual categorization might tell some of the story.

Table 5.18. Dimensions of ideology and friend preferences, zero-order point-biserial correlations. Boldface = *p* < 0.10.

Friend preference	Corr. with fiscal ideology (*p* – value)	Corr. with moral ideology (*p* – value)	Corr. with tough-tender ideology (*p* – value)	Corr. with military ideology (*p* – value)
Make up mind (1) vs. revisit opin's (0)	0.14 (0.14)	0.05 (0.56)	**0.16* (0.08)**	**0.18* (0.06)**
Intelligent (1) vs. same beliefs (0)	-0.05 (0.58)	**-0.17* (0.08)**	-0.11 (0.24)	**-0.19* (0.04)**
Talkative (1) vs. stoic (0)	-0.14 (0.14)	-0.16 (0.09)	-0.06 (0.52)	-0.09 (0.34)
Musical talent (1) vs. sports talent (0)	**-0.27* (0.003)**	-0.02 (0.85)	-0.14 (0.15)	-0.11 (0.26)
Great writer (1) vs. strong leader (0)	-0.08 (0.41)	-0.06 (0.50)	-0.08 (0.37)	-0.04 (0.64)
Forgiving (1) vs. no flak (0)	-0.12 (0.22)	-0.02 (0.83)	-0.02 (0.79)	-0.15 (0.11)
Dependable (1) vs. comforting (0)	0.01 (0.92)	0.07 (0.44)	0.13 (0.17)	0.05 (0.60)
Neat and orderly (1) vs. not-so-much (0)	0.02 (0.83)	0.06 (0.51)	0.03 (0.77)	-0.10 (0.31)

N= 112; *p* – values all two-tailed.

Attempt at replication: In the second Student dataset, I attempted a replication of this result, this time using only a subsample of 30 students and items tapping a (hypothesized conservative) preference for a decisive friend over one who re-visits opinions; a dependable friend over one who comforts you; a friend who is intelligent over one who shares your same beliefs; a friend who is talented at sports over one who is talented at music; and a friend who is a strong leader over one who is a talented writer of poetry and prose. Two correlations approached significance and constitute weak replications: tough-minded conservatism was positively correlated at r = 0.28 and 0.25 with preferences for a decisive friend and with a strong leader rather than a talented writer.

H11. Given a choice between two strategies for dealing with "germs"—keeping them out of the body versus allowing some germs in but boosting the immune

system to deal with them, conservatives more than liberals will prefer to "keep the germs out."

This hypothesis is derived from a physical conceptualization of "compartmentalization": the body is the compartment, and danger in the form of germs is either kept out of the compartment or allowed to pass through the compartment walls and managed. Subjects were asked a single forced-choice question with two response options gauging whether, to stay healthy, they'd rather keep germs out of their bodies or allow some germs in and try to maintain a healthy immune system—allowing that both strategies were part of a good health regimen.

The result of the simple test is that the four different issue-position-measured dimensions of ideology either significantly or near-significantly predict this preference among N=187 respondents, with point-biserial correlations between the keeping-germs-out choice and fiscal conservatism of r = 0.14, $p = 0.03$; moral conservatism r = 0.20, $p = 0.003$; military conservatism r = 0.19, $p = 0.005$; and tough-minded conservatism, r = 0.11, $p = 0.06$, all significance levels one-tailed.

Table 5.19. Logit regressions, dependent variable: 0=let germs in and maintain immune system, 1=keep germs out of body.

Independent variable	Fiscal ideology logit coefficient (std err)	p – value (one-tailed for ideology measures)	Military ideology logit coefficient (std err)	p – value (one-tailed for ideology measures)	Tough ideology logit coefficient (std err)	p – value (one-tailed for ideology measures)
Moral ideology	0.69** (0.23)	0.006	0.42** (0.19)	0.012	0.46** (0.18)	0.006
Fiscal ideology	0.26* (0.18)	0.05				
Military ideology			0.40* (0.19)	0.015		
Tough-tender ideology					0.24 (0.19)	0.10
Respondent sex	0.20 (0.39)	0.608	0.12 (0.39)	0.763	0.12 (0.39)	0.748
	Pseudo-R^2=0.05		Pseudo-R^2=0.06		Pseudo-R^2=0.04	
N=183 for each regression. Constant terms not shown. ** $p < 0.01$, * $p < 0.05$						

It does not appear that moral conservatism, the ideological dimension with the strongest effect, or religious attendance, is driving the effect for other dimensions. Table 5.19 shows logit regressions "predicting" the keep-germs-out preference with ideological dimensions and sex as an additional control variable. Although

significance levels are reduced in some cases, it does appear that the conservatives of various types, relative to liberals, *independently* prefer keeping germs out of the body rather than maintaining the immune system as a principal means of staying healthy. Certainly moral conservatives do, but controlling for moral conservatism, so do other conservative thinkers.

Finally, it is notable that, as with so many other findings in this study, had we used *self-identified* ideology—whether general liberalism-conservatism, fiscal, or "social," we'd be stuck with not much of a finding. General self-identified ideology is correlated with keep-germs-out at r = 0.12, *p* = 0.05 one-tailed, but the fiscal and general measures yield nonsignificant correlations. It's not that conservatives, knowing they are conservative, obligingly adopt a "cleanliness-is-next-to-godliness" attitude toward hygiene. Rather, it looks more like people who *think* in conservative ways about politics are thinking in different ways about hygiene too, and that's showing up in their preference to keep germs out of their bodies.

For further clues as to what kind of cognition produces this germ preference, it's worth reporting that wanting to keep germs out was significantly and negatively correlated with trait Openness at *p* = 0.02, persuadability at *p* = 0.009, and positively with trait extraversion and agreeableness at *p* = 0.06 and 0.08, respectively. Cognitive rigidity, therefore, would appear to be part of this story.

One more thing about germs: Some readers may have noticed an almost irresistible analogy to "keeping immigrants out of our country" and, while I don't want to make too much of an immigrant-germ equivalency that conservatives may well not perceive at all, it's worth a little more investigating. So, of the different issue questions, does the question about immigration alone correlate significantly with the germ preference? Actually, no! Preference for slowing down or stopping immigration, in this dataset, was unrelated to the germ question. Rather, the question which was most related to "germs" was about allowing gay marriage. This dissertation is not about emotion, but no doubt emotion researchers will see a "disgust" connection here. The relationship with Openness indicates that there is probably a cognitive story to tell as well, however.

Attempts at replication: The germ item was included for student sample 2, with a subsample of 72 participants answering it. The results constitute a replication in broad outline, although there are differences. Preference for "keeping germs out" was correlated positively with conservatism in all three dimensions of ideology, but only significantly with tough-tender ideology, r = 0.28, *p* = 0.007. The correlations with fiscal and moral ideology, respectively, were 0.15 and 0.13, *p*s = 0.10 and 0.15.

Moreover, the preference for keeping germs out is clearly, once again, a function of basic cognitive rigidity, with significant correlations with ambiguity intolerance (r=0.35, *p* = 0.016, N = 38), deliberative complexity (r = -0.27, *p* = 0.012, N = 72), categorization strength$_{general}$ (r = 0.22, *p* = 0.03, N = 72) and categorization strength$_{tough-tender}$ (r = 0.24, *p* = 0.02, N = 72), all significance tests one-tailed.

The item was also administered to a subsample of the Tallahassee adults, N = 63. A preference for "keeping germs out" was positively related (predicting conservatism) to all three ideological dimensions yet again, but only significantly

with tough-minded conservatism, r = 0.26, p = 0.018 one-tailed. Cognitive flexibility and rigidity measures were not significantly related to the germ preference in the Tallahassee sample.

H12. People who dominated others during their middle school years grow up to be more conservative.

If it's true that conservative adults tended to bully others as kids, this suggests that whatever psychological profile is associated with conservatism, it's well on its developmental way long before most of us develop the ability to think politically. Of course, it would be better if I were in possession of objective observations of adolescent behavior and did not have to rely on subjects' recollections. Current self-perceptions of toughness can easily be projected pastward to become false memories of youth. But that is why I am not basing a 500-page dissertation on answers to this question alone. Take this result for what it's worth!

Would playground domination suggest a lack of Openness, an overabundance of decisiveness, a perception of the world in sharp categories? The theoretical case is there to be made. It rests on the assumption that Extraversion is detectable during adolescence and that assertiveness is facilitated by, and may over developmental time even cause, a categorizing cognitive style. And categorization might not only facilitate but cause aggressiveness too, through a failure to identify or empathize with others.

An alternate theory rests on Authoritarian aggression (Altemeyer 1988)—a hostile disgust at outgroups—as a possibility, which indicates that young *moral* pre-conservatives might have reason to be aggressive toward young misfits who behave in less conventional ways, although roping C-theory into this scenario makes for a slightly worse fit. Motivation could play a role, though: if young Authoritarians are motivated to attain a feeling of certainty, perhaps establishing clear hierarchies on the playground, a form of peer categorization, would help to accomplish that.

I tested the general hypothesis by including this question for student sample 1:

When you were in the 7th and 8th grades, how often did you pick fights with, or physically dominate, other students?

with four response options—"often," "sometimes," "on rare occasions," and "never."

The data suggest that conservatives dominated others when they were in middle school—but for fiscally conservative thinkers, the case is weak enough that little attention need be paid to it. Table 5.20 shows correlations between ideological measures and answers to this question.

There certainly appears to be a relationship between moral ideology and youthful physical domination, and incidentally this relationship holds for both men and women (rs = 0.19 and 0.21, respectively). Is this the result of "Authoritarian aggression" (Altemeyer 1988)? Using my admittedly weak measure of

Table 5.20. Correlations of middle-school physical domination with ideological dimensions. Student sample 1.

Ideological measurement (conservatism higher)	Pearson's r	p – value, one-tailed
Fiscal ideology by issue positions	0.04	0.30
Military ideology by issue positions	0.15	0.02
Tough-tender ideology by issue positions	0.09	0.12
Moral ideology by issue positions	0.21	0.002
Self-identified liberalism-conservatism	0.03	0.35
Self-identified *fiscal* liberalism-conservatism	0.11	0.06
Self-identified *moral* liberalism-conservatism	-0.06	0.39
N=185, except general liberalism-conservatism, N=174 Note: p – value two-tailed for self-identified fiscal ideology since r signed in wrong direction		

authoritarianism (and making the rather wild assumption that it taps authoritarian aggression), it doesn't appear so. In the ordered logit of table 5.21, I control for sex (and yes, males were more aggressive as youths) and Authoritarianism.

Table 5.21. Self-report of having physically dominated others in middle school, ordered logit.

Independent var.	Logit coefficient	Std. error	p – value, two-tailed
Moral ideology by issue-positions	0.28	0.16	0.085
Respondent sex	-0.94	0.41	0.003
Authoritarianism	0.414	0.408	0.310

N = 183, pseudo-R^2 = 0.037

Although the significance level of moral ideology is lower, it is still significant in a one-tailed test, and leaving Authoritarianism out of the regression only increases the coefficient for moral ideology from 0.28 to 0.32 (with a significance level of 0.037), suggesting that the loss of statistical significance might be more the result of multicollinearity between Authoritarianism and moral

conservatism than because Authoritarianism as a trait is the "real" reason why moral conservatives were more dominant as youths.

I suspect that at least one plausible explanation for the moral-conservatism-youthful-dominance relationship can be found in the work of Jost, *et al.* (2003). It may be the case that these youths possess an emerging view of the world as dangerous and their position in it as uncertain (as opposed to fiscal conservatives, who see the world more as an opportunity for conquest and victory), and may be addressing this by attempting to make themselves look like an uninviting target for other aggressors. This might not suggest a categorizing perception, but it could suggest a psychology *in search of* a social order and leadership that is reassuringly authoritative. That is, young dominators might not have been so much certain as they were in search of certainty—which, as adults, they would find in strong, tough-minded political leaders.

H13. Conservatives are *less* afraid, as part of a general psychological profile, than liberals are.

No sooner do I suggest that young moral conservatives suffer from dangerous-world perceptions…

It is fair to paraphrase Jost and colleagues (2003) by stating simply that conservatism is driven largely by fear: fear of change, fear of outsiders, fear of the unknown, fear of ambiguous situations. But conservatives have never struck your humble author as a particularly quivering lot, and it's difficult to see how the confident certainty that categorization strength, or any preconscious cognitive-rigidity-facilitating perceptual style, would surely produce, would make for a very fearful person. And we are now in possession of a recent (Gerber, et al., 2009) finding that economic conservatives are higher than their liberal counterparts in Emotional stability. Indeed, C-theory especially in its evolutionary-psychology implications to be discussed later suggests that conservatism—especially secular dimensions—is related to a deep-psychological "warriorism" which manifests in higher levels of Extraversion and decisiveness, and probably *lower* levels of fear.

Jost, *et al.* judge conservatives as fearful based largely on Authoritarianism research (which conflates fear with aggressiveness), on Terror Management Theory (Wilson 1973), and on findings that "fear of threat and loss" are correlated with conservatism. For my measurement, I included a simple, single item along with the many self-descriptive trait descriptions: "I often feel afraid." Subjects answered on the 5-point scale ranging from "Very inaccurate" to "Very accurate." I report only zero-order correlational results here, but they're clear. Fiscal conservatives are significantly *less* afraid than fiscal liberals, measured by issue positions, $r = -0.18$, $p = .018$, two-tailed. "Military" conservatives—those who are pro-Iraq-war, pro-Israel (against the Palestinians), favor greater expenditures on military strength, favor a unilateral foreign policy, and are pro-death penalty—are also less fearful by their self-descriptions at near-conventional significance levels, $r = -0.14$, $p = .054$, two-tailed.

Tough-minded and moral conservatives and liberals do not differ in self-rated fearfulness (rs = 0.01 and -0.03, ps = 0.847 and 0.663, respectively).

This is only a single question, of course. Can we trust it? I don't, of course, have a lot of data on fear, but a related item *not* asked consecutively with the fear question requested another accurate-to-inaccurate response to the statement "I worry about things." This item was correlated with the fear item, r = 0.35, p = 0.0000, and also predicted fiscal ideology, albeit more weakly, r = -0.14, p = 0.07, two-tailed. Other forms of ideology were unrelated to self-reported worry.

In the attempt to learn more about responses to the fear item, I correlated it with Big-Five traits and also the accurate-to-inaccurate item "I would describe myself as indecisive," and found that less fearful people are significantly more extraverted (though, curiously, *not* more dominant) and more conscientious, for what that's worth. They are confidently assertive. They act decisively. And they have their lives in order.

Bolstering this argument is a look at the correlations between responses to the "afraid" item and three dimensions of "need for closure" which emerged from the Kruglanski and Webster items. Probably conventional wisdom would hold that NFC should predict fearfulness. The outcome, though more complicated than that, is intuitively pleasing: the "decisiveness" dimension of NFC correlated negatively and significantly (r = -0.21, p = 0.004) with being afraid: those more decisive are less afraid. However, the preference-for-simplicity *and* the need-to-know-things dimensions correlated *positively* with being afraid: (rs = 0.19 and 0.24, ps = 0.01 and 0.001).

And we know that in student sample 1 the desire for simplicity is significantly and positively related to moral conservatism (r = 0.17, p = 0.016), but not to the secular dimensions. In this dataset, moral conservatives are *not* more afraid than moral liberals—perhaps because they are also more decisive (implying *less* afraid; r = 0.15, p = 0.038) than liberals. But reading all of these correlations together, we can see more of the emerging story of moral ideology: in some ways, moral conservatives may in fact feel more anxiety about uncertainty than moral liberals do, or than secular conservatives, who seem to feel the least anxiety of all. Moral conservatives seem to crave simplicity and seem also to "need to know" hidden truths, such as what others are thinking (or what will happen to them in the afterlife?). But this certainty they crave appears to be something which they lack—not relative to liberals, but to secular conservatives.

To sum up the results of tests of hypothesis 11, it appears being less fearful and less worried are related to fiscal conservatism. And this is not because people who think themselves fiscally conservative then report that they are fearless in order to fulfill some kind of warrior/businessman stereotype: although self-reported fear *is* related to self-identification as fiscally conservative, it's related more weakly (r = -0.14, p = 0.07) than it is to endorsing fiscally conservative positions on issues. This suggests that general fearlessness—or at least seeing oneself as fearless—which seems a quite logical consequence of perceiving things with categorical certainty, is part of a psychological makeup which outputs fiscally conservative *thinking*.

H14. Given a choice between a seating arrangement in which a teacher stands in front of a seated class, and a more "integrated" seating in which an instructor and students sit in a circle and the instructor is in no way physically separated from the class, conservatives will choose greater instructor-student separation, in a kind of person-categorization effect.

To test this hypothesis, a subset of participants (N=83) in student sample 1 was shown three drawings depicting possible teacher-class seating arrangements and told that a study had been conducted to determine which of the seating arrangements was the most effective for learning. The three seating arrangements depicted, from left to right in figure 5.3, increasing "instructor integration" into the class—that is, at the left, the instructor is quite distinctly separated from the class, and at the right the instructor is situationally indistinguishable from a class member. In the middle, the instructor is partially integrated into the "circle." Shown the bogus experimental seating arrangements, participants were then asked two questions: which of the three arrangements did they guess had been shown to be the most effective? and which of the three arrangements did they think would be most effective for their own learning? Responses to these two questions were fairly strongly correlated (r = 0.50) and were combined to form an additive index (Crohnbach's $\alpha = 0.66$) of favorability toward integrated seating arrangement.

Figure 5.3. Classroom arrangements.
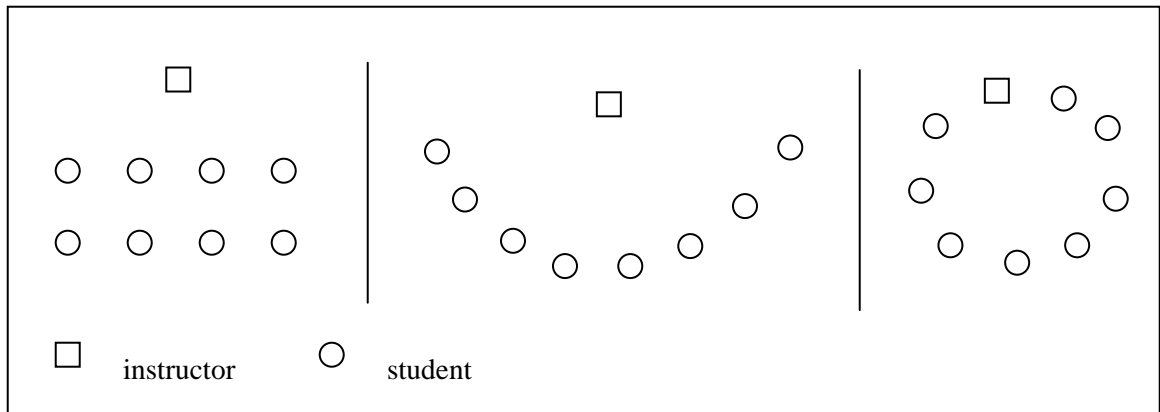
The results are weak but suggestively in the expected direction. For men, the index of preference for integrated seating is, as expected, negatively correlated with every dimension of ideology, but the largest r is -0.10, $p = 0.10$ one-tailed. For women, the results are more suggestive. With moral and fiscal ideology, the seat preference is entirely uncorrelated—r = 0.00 for both. But for military and tough-tender ideology, the results run in the expected direction, r = -0.25 for each, with one-

tailed *p* values of 0.025 and 0.023 respectively. A little further investigation of sex-moderated results indicates that for males, moral conservatism is also negatively related to the second question only—which seating arrangement would work best for the respondent's own learning—at r = -0.23, *p* = 0.01 one-tailed.

An investigation of possible trait connections shows that the trait most closely (and positively) related to a preference for integrated seating is Agreeableness (and not Openness or Persuadability at all), with a correlation between integrated seating preference and Agreeableness of r = 0.20, *p* = 0.008. The relationship holds (is the same r = 0.20) for both sexes. This makes sense—more agreeable people should want more face-to-face contact with other students and with the instructor. But it's not clear that Agreeableness is what's driving the relationship between ideology and seating preference. For women, ordered logit (not shown) reveals that including agreeableness as a covariate does little damage to the relationship between a combined tough-tender/military ideology index and the seat-preference index. Nor does Agreeableness damage the relationship between moral ideology and seating preference for men (ordered logit not shown).

Most importantly, there is only one other cognitive variable I found that "explains" the seat preference—categorization strength itself. Belief that one would learn better in the more "separated" seating condition is predicted by categorization strength, as shown in the regression of table 5.22, and the control for self-identified "social" conservatism lends confidence that this is not a result of some kind of "preference for what's traditional" that conservatism "teaches" its adherents to espouse. This preference for separated seating has psychological roots.

Table 5.22. Preference for more separated seating arrangement in classroom, ordered logit coefficients

Independent variable	Ordered logit coefficient (standard error)	*p* – value (two-tailed)
Categorization strength	0.53 (0.19)	0.004
Self-identified "social" ideology	0.64 (0.85)	0.455
Religious attendance (0-1)	-0.50 (0.80)	0.533
N = 86; pseudo R^2 = 0.054		

H15. In a word-association-type task, liberals will connect more words than conservatives will.

This task involved having subjects retrieve a sheet of paper from an envelope. The sheet contained two columns of 15 words each. The words were chosen by the

author and intended neither to be particularly interrelated nor to be mutually unrelated. Three different sheets of words were used. Figure 5.4 depicts the three sheets.

Subjects were instructed simply to draw lines connecting words from the left column with words from the right column if, *for any reason whatsoever*, the words seemed related. They could be physically related, causally related—it didn't matter. If the two words went together somehow, the subject should connect them. Any single word could be connected to multiple other words, so the task was essentially unrestricted.

This task is intended, actually, as an alternate measure of categorization strength itself. Categorization strength is a theory about networks of semantic association. People with weakly bounded categories should simply see more concept-to-concept connections than do people with strongly bounded categories.

To test the hypothesis, the number of lines drawn is used as an explanatory variable in a regression to predict ideology, with the variable transformed into its natural logarithm to reflect the probability that, beyond a certain number of lines drawn, there is no "additional liberalism" predicted by the willy-nilly acknowledgement of ridiculous relationships. Liberals are expected to draw more lines; Marxists are not necessarily expected to connect every word to every other word! In raw form, the mean number of lines drawn was 12.8, with minimum number of lines drawn by any subject 4; the maximum was 25, and the standard deviation was 4.07 lines.

Your humble author dutifully counted up all the lines participants drew and recorded the data. The result? It is that drawing more lines is at least somewhat associated with more liberal thinking in every ideological dimension factor extracted in student sample 1. Nonsignificantly, self-identification as *conservative* is related to drawing *more* lines ($p = 0.63$), but controlling for that, conservative issue positions are mainly, and more strongly, predicted by drawing *fewer* lines. Table 5.23 shows the results in 4 separate regressions, for the four ideological dimensions.

It's not the most striking table in the history of political science. We would probably be justified in using one-tailed tests for the variable of interest, the number of lines drawn in the task. However, even allowing this, the variable is only significant in predicting moral ideological thinking. Its one-tailed p – value for the other regressions would be 0.19, 0.10 and 0.2. This is certainly more consistent with the predicted effect than with no effect at all, but weak.

Figure 5.4. The word-matching task

This is a simple word matching task. Match words on the left with words on the right. The words can be associated *in any way that makes sense to you*. For example, they could have the same meaning, they could be opposites, they could be very similar, they could rhyme, they could be commonly used together, or whatever.

Match words simply by drawing a line connecting words on the left with words on the right. You may draw as many lines as you wish, without any limits, as long as they connect a word on the left with a word on the right. You will have up to 2 minutes to make all the matches that make sense to you. If you finish before 2 minutes, you may simply put this paper back into the envelope and wait until the time is up. The computer will let you know when time is up by changing the color of the screen. At that point, please place this paper back in the envelope and hit "continue."

Please immediately click "continue" NOW to begin the 2-minute timer, then start connecting words. Do not familiarize yourself with the words first—just click "continue" and begin.

Daredevil	Faith
Futuristic	Satisfied
Green	Argue
Navigate	Lizard
Quarter	Law
Winning	Emphasize
Fear	Harmonica
Relief	Jupiter
God	Kansas
Anxiety	Razor
Bounce	Knife
Sphere	Van
Elevator	Criticize
Hammer	Century
Jump	Road

Razor	Futuristic
Evil	Harmonica
Fear	Purple
Cash	Razor
State	Knife
Anxiety	Nail
Fork	Zoo
Jump	Pinecone
Faith	Ditch
Streamlined	Meal
Amplifier	Jet
Argue	Satellite
Religion	Flower
Tree	Doughnut
Bluejay	Green

Airplane	Lazy
Trophy	Order
Emphasize	Meal
Harmonica	Sandwich
Infinity	Eraser
See	Animal
Stomach	Lizard
Cash	Law
Van	Kansas
Yelp	Navigate
State	Knife
Bounce	Problem
Pinecone	God
Road	Ocean
Cry	Wait

Table 5.23. Predicting ideological dimensions with the number of lines drawn in a word-association task.

Independent var.	ß for moral ideology (std err)	p – value, two-tailed	ß for fiscal ideology (std err)	p – value, two-tailed	ß for military ideology (std err)	p – value, two-tailed	ß for tough-tender ideology (std err)	p – value, two-tailed
ln (# of lines drawn)	-0.45 (0.24)	0.063	-0.24 (0.26)	0.38	-0.37 (0.28)	0.199	-0.27 (0.32)	0.41
Self-identified liberalism-conservatism (0-1)	1.51 (0.32)	0.000	1.69 (0.33)	0.000	1.97 (0.36)	0.000	1.21 (0.41)	0.004
Religious attnd (0-1)	1.22 (0.26)	0.000						
Respondent sex (0=male, 1=female)	-0.25 (0.16)	0.126	-0.04 (0.17)	0.830	0.21 (0.19)	0.261	-0.07 (0.22)	0.733

N=90; R^2 = 0.45; 0.24; 0.28; 0.10, from left to right

H16. Conservative adults played more varsity sports in high school.

The theoretical idea here is that the strong, even militaristic, coaching in modern American sports teaches athletes to make quick decisions and not question those decisions, and in addition, sports participation may also engender an us-versus-them categorizing mentality, as well as an appreciation for the unforgiving justice of victory and loss, with an aversion to the assuaging of failure's pain. In other words, the chronic experience of athletic competition might promote a categorizing cognitive style which, applied to politics, would result in conservatism of various dimensions. Of course, equally—perhaps more—theoretically pleasing is that something about the cognitive style that might affect political thinking makes sports more attractive too. A decisive cognitive style, especially if in service of a competitive or fighting spirit, would also make participating in sports attractive.

Students in sample 1 were simply asked whether they participated in varsity high school sports, coded 0 and 1, where 1 = yes. The results show that in student sample 1, ideology is clearly related in the predicted direction to varsity sports participation, but only significantly for moral and military ideology, and very nearly significantly for fiscal ideology. The zero-order correlations appear in table 5.24.

I further investigated whether recognizing that one is morally conservative, or church attendance, is the cause of athletic participation: church attendance, or a comfort

Table 5.24. Correlations of high-school varsity sports participation (0=no, 1=yes) with ideological dimensions.

Ideological dimension	Point-biserial correlation (p – value, one-tailed)
Fiscal ideology, by issue-positions	0.12 (0.052)
Moral ideology, by issue-positions	0.30 (0.0000)
Military ideology, by issue-positions	0.22 (0.002)
Tough-tender ideology, by issue-positions	0.07 (0.016)
"Social" ideology by self-ID	0.27 (0.0001)
"Fiscal" ideology by self-ID	0.07 (0.16)
General liberalism-conservatism, self-ID	0.26 (0.0003)
N=183	

Table 5.25. Self-reported participation in high school varsity athletics, logit coefficients

Independent variable	Logit coefficient (std error)	p – value (one-tailed for ideological variables)
Moral ideology, by issue positions	0.46* (0.27)	0.044
"Social" ideology, self-ID	0.35 (0.86)	0.345
Respondent sex (0=male, 1=female)	-0.59 (0.33)	0.079
Church attendance	0.56 (0.58)	0.331

N=183, pseudo R^2 = 0.086; * $p < 0.05$

Table 5.26. Self-reported participation in high school varsity athletics, logit coefficients

Independent variable	Logit coefficient (std error)	p – value (one-tailed for ideological variables)
Military ideology, by issue positions	0.41** (0.17)	0.008
"Social" ideology, self-ID	1.06* (0.64)	0.047
Respondent sex (0=male, 1=female)	-0.57 (0.34)	0.09
Church attendance	1.09 (0.56)	0.052

N=183, pseudo R^2 = 0.098; * $p < 0.05$, ** $p < 0.01$

level with other moral conservatives, might predispose one to seek the kind of company one expects to find in athletics. The answer is no—net of self-identified "social" ideology, religious attendance and sex (females appear to be less likely to have participated), holding more morally conservative *positions* still predicts athletic participation, as shown in table 5.25.

Military ideology survives the same controls even better, likely a result of its lower collinearity with self-identified social ideology. It's clear that feelings about military issues are independently related to participation in sports, net of moral ideology and of church attendance, which from the results of table 5.26 seems likely to have its own real and positive effect on sports participation.

H17. Conservatives are more comfortable than liberals in heated confrontations with others.

This is intended to be a different prediction than simply that conservatives have more trait Extraversion, or more trait dominance, as a facet of Extraversion. Whereas trait dominance is intended as a measure of how often a respondent dominates others, this is intended simply as a measure of one's level of comfort in the unavoidable heated confrontations that occur in the course of life. However, since any question about comfort in a confrontation is likely to be correlated with dominance, we will wish to assess whether any difference between liberals and conservatives survives a control for trait dominance.

Theoretically, much of the comfort in a heated confrontation would derive from an individual's satisfaction that he or she is in the right and need not reconsider his or her position. This would easily be a result of categorical thinking: if "what is right" in a situation is a leaky concept, *i.e.,* is a notion that has allowed competing and contrary considerations to invade one's initial conclusion, then standing up for one's point of view

would be uncomfortable. Moreover, a failure to categorize one's opponent in a confrontation as sufficiently different from oneself might lead to feelings of empathy, which would make confrontation quite uncomfortable.

All 187 of the participants from student sample 1 answered the item,

In a heated confrontation with someone, I am…

A. At my best: you definitely don't want to get into a confrontation with me.
B. Somewhat uncomfortable, but perfectly able to maintain my composure. I seldom get "dominated" in a confrontation.
C. Very uncomfortable. I may try to stand up for myself, but the other person sometimes "gets the better of me."
D. At my worst: in a confrontation, I lose my composure and I am almost paralyzed, unable to think of what to say.

The data indicate that, in our sample, conservatives indeed are more comfortable in heated confrontations than liberals are—except along the moral dimension, where there is no significant difference (but a hint that moral conservatives in the sample were *less* comfortable than liberals). Pearson correlations and two-tailed p – values between comfort in a heated confrontation (recoded to range from 0 to 1, where 1 = more comfort in confrontations) and ideology are, for fiscal, military, tough-tender and moral, 0.25 (0.0004); 0.22 (0.004); 0.15 (0.03); and -0.08 (0.26), respectively. Moreover, the relationship between confrontational comfort and ideology of the fiscal and military dimensions survives the control for trait dominance: dominance seems to "cause" conservatism, but above that, comfort with confrontations is associated with yet more conservatism.

Table 5.27 shows the OLS results. Even controlling for dominance, a change from total paralysis in a confrontation to total confidence is associated with a three-quarter-standard-deviation increase in fiscal conservatism, and although "heated confrontation" doesn't fully survive the control in the military-ideology regression, it's nearly significant and associated with a considerable increase in military conservatism.

Notice there is a third regression shown in the table. The reader may recall that dominance was quite strongly and positively associated in student sample 1 with moral conservatism. And indeed, controlling for dominance, comfort in a heated confrontation is significantly and *negatively* related to moral conservatism, measured by issues. To me—and I stress, this is quite speculative—this suggests a difference in the psychology of the different dimensions. Although dominating others may well be characteristic of various kinds of conservatives, there is a difference in the level of comfort with conflict between moral conservatives and the other kinds. Moral conservatives may well, as Jost et al. suggest, be more "afraid" of the dangerous world in certain ways—more afraid than other kinds of conservatives, and possibly even more afraid than liberals. They may seek to deal with this fear by defeating perceived enemies—"dominating" you might say, sometimes even channeling this aggressive energy into sports. However, moral conservatives never get as comfortable with conflict as fiscal and other kinds of conservatives do. Contrary to stereotype, it is *secular* conservatives who are more certain of the inherent, categorical righteousness of their position.

Table 5.27. Dependent variables: fiscal and military conservatism, OLS regression

Independent variable	OLS coefficient (std error)	p – value (two-tailed)
Fiscal ideology regression		
Comfort in a heated confrontation (0 to 1)	0.79 (0.39)	0.046
Trait dominance (standardized)	0.33 (0.14)	0.016
Respondent sex (0=male, 1=female)	-0.21 (0.15)	0.154
Constant	-0.48 (0.3)	0.105
N=183, $R^2 = 0.11$		
Military ideology regression		
Comfort in a heated confrontation (0 to 1)	0.56 (0.40)	0.165
Trait dominance (standardized)	0.30 (0.14)	0.034
Respondent sex (0=male, 1=female)	-0.08 (0.15)	0.601
Constant	-0.35 (0.3)	0.247
N=183, $R^2 = 0.064$		
Moral ideology regression		
Comfort in a heated confrontation (0 to 1)	-0.56 (0.40)	0.039
Trait dominance (standardized)	0.85 (0.14)	0.035
Respondent sex (0=male, 1=female)	-0.29 (0.15)	0.057
Constant	0.70 (0.3)	0.022
N=183, $R^2 = 0.047$		

H18. Conservatives more than liberals think a guy who has trouble "getting girls" due to his being a nerd can get more girls by growing some backbone and imitating other, cooler guys who get lots of girls. Liberals more than conservatives think the same guy should just embrace his personality and accept that "getting lots of girls" is not the kind of guy he is.

This whimsical item, introduced late in the research program to the Tallahassee sample alone, is designed to tap a notion similar to individualism, a notion of personal

effectiveness, perhaps even a variant of locus-of-control concepts. Theory suggests categorization and more mechanical cognitive styles should lead to strong and simple cause-effect linkages. Actions bring results. Want different results? Simple: decide to change your actions, and thus empowered by your decision, change them. The opposite view suggests that one does not simply "decide" to have a new personality or to radically alter complex behaviors, that the influences that swirl together to form a personality, or to produce situational behaviors, are too numerous and mysterious to be changed mechanically in response to a mere decision. The item, then, attempts to drive at similar cognitive stuff as deliberative complexity and attributionism, both measures of individual differences in the tendency to explain causal relationships via simple, obvious, and mechanical, versus complex, organic and mysterious, schemata.

For the item at hand, a subsample of 68 participants from the Tallahassee sample read about "Andrew," a young man who sounds frighteningly like a younger version of your author:

> Andrew is 26 years old and he has always had trouble attracting girls. He's sad and frustrated about it. Most people think he's a reasonably good-looking guy, but he's uncomfortable in social situations. When he forces himself to be sociable, it often comes out awkward. Some would call Andrew "nerdy."

> Where on the following scale does your opinion of Andrew's predicament most closely fall?

Participants were offered four response options. Response # 1 read,

> Andrew can fix his situation by "growing some backbone." Watch people who are good in social situations and learn to imitate them. Practice, and grow a thicker skin. Andrew can get girls if he really wants to.

And on the opposite end, response # 4 read,

> Andrew should embrace his personality and be patient; he will probably find the right person eventually, and then things will "click." Different people have different personalities, and Andrew's personality is probably destined to remain what it is.

The two middle options, # 2 and # 3 read, "mostly opinion #1 (#4), but a little bit of #4 (#1)."

Responses to the "Andrew" item are recoded to range from 0 to 1 so that 1 represents the belief that Andrew can change his personality by decision.

The results? I control for participant sex because of the likelihood that women, who are more liberal, will also be less demanding of Andrew. And indeed, they are, almost significantly, with the mean answer of women lower by 0.12 (more embracing of Andrew's personality) than that of men, $p = 0.055$ one-tailed.

Nonetheless, controlling for sex, it's fairly clear that conservatives more strongly see Andrew's failure to get girls as a problem he can do something about—it's not quite significant for the fiscal dimension, but the prediction is quite strong for the tough-tender

dimension and conventionally significant for moral ideology too. The results, shown in tables 5.28, estimate that, controlling for sex, a change from minimal to maximal embrace of Andrew's current nerdy personality (1 to 0) is associated with a whopping 1.34-standard-deviation change toward tender-minded liberalism.

Table 5.28 Predicting three ideological dimensions with perceptions that Andrew has control over his nerdiness and failure to get girls.
Tallahassee sample. OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Predicting fiscal ideology (measured by issue positions, standardized)		
Perception that Andrew can correct his girl problem (0 to 1)	0.56 (0.43)	0.10
Participant sex (0 = M, 1 = F)	-0.41 (0.26)	0.125
N = 62, R^2 = 0.08		
Predicting tough-tender ideology (by issue positions, standardized)		
Perception that Andrew can correct his girl problem (0 to 1)	1.34 (0.40)	0.001
Participant sex (0 = M, 1 = F)	0.014 (0.25)	0.952
N = 62, R^2 = 0.16		
Predicting moral ideology (by issue positions, standardized)		
Perception that Andrew can correct his girl problem (0 to 1)	0.71 (0.34)	0.022
Participant sex (0 = M, 1 = F)	-0.16 (0.21)	0.437
Religious attendance (0 to 1)	1.59 (0.28)	0.0000
N = 61, R^2 = 0.38		

Significance tests one-tailed for Andrew perception, otherwise two-tailed. Constant terms irrelevant and not shown

Tough love for Andrew is also associated with cognitive rigidity measures—most notably categorization strength. Significant and predicted relationships exist between the belief that Andrew controls his love-life prospects and categorization strength (r = 0.40, p = 0.0006), Ambiguity Intolerance (r = 0.34, p = 0.025), deliberative complexity (r = -0.23, p = 0.035), attributionism (r = 0.27, p = 0.016), and Experiential Openness (r = -0.22, p = 0.04), all tests one-tailed.

H19. Conservatives more than liberals perceive that a guy who has trouble getting a job because of his social awkwardness and being overweight is more to blame for this outcome and less justified in thinking it unfair.

A second item, intended to measure the same thing as "Andrew," asked other randomly selected participants[6] to comment on whether it was fair or unfair that "Doug," an overweight and socially awkward person, had been passed over for several jobs even

Table 5.29 Predicting three ideological dimensions with perceptions that Doug is to blame for failure to get a job, Tallahassee sample. OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Predicting fiscal ideology (measured by issue positions, standardized)		
Perception that Doug is to blame (0 to 1)	0.77 (0.40)	0.030
Participant sex (0 = M, 1 = F)	-0.37 (0.25)	0.142
N = 65, R^2 = 0.09		
Predicting tough-tender ideology (by issue positions, standardized)		
Perception that Doug is to blame (0 to 1)	0.43 (0.42)	0.16
Participant sex (0 = M, 1 = F)	-0.37 (0.26)	0.166
N = 65, R^2 = 0.05		
Predicting moral ideology (by issue positions, standardized)		
Perception that Doug is to blame (0 to 1)	0.67 (0.33)	0.025
Participant sex (0 = M, 1 = F)	-0.12 (0.21)	0.56
Religious attendance (0 to 1)	1.41 (0.31)	0.0000
N = 64, R^2 = 0.27		

Significance tests one-tailed for Doug perception, otherwise two-tailed. Constant terms irrelevant and not shown

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[6] About two-thirds of the people selected into the "Andrew" question were also selected into this question about "Doug."

though he was highly qualified for them and the ultimate people who were hired had often been less qualified "on paper." Doug suspected his weight and poor conversation skills were holding him back. The "it's fair" response indicated that Doug, knowing what was holding him back, could well have done something about it; while the "it's unfair" option characterized Doug's obesity as an unfortunate and unjust burden.

For the "Doug" item, 0 indicates being most forgiving of Doug, and 1 represents the strongest indictment of him. It was predicted that conservatives would be tougher on Doug based on their perception that his decisions are directly linked to the consequences he suffers. It is arguable that there is a whiff of contamination by fiscal ideology itself inherent in the question: fiscal conservatism may "hold" as an unspoken tenet that each person is fully responsible for landing his own job. However, it is surely also a cornerstone of fiscal conservatism that the most qualified person should get the job—that special preferences are unjust (as for blacks or women). Even if this question is confounded with some component of fiscal ideology, if it predicts fiscal ideology, it still reveals something of the way fiscal ideology functions: via relatively strong perceptions that people control their own destinies—and that poor outcomes for individuals are typically just.

So were conservatives harder on Doug than liberals were? Yep. This time, it's fiscal and moral conservatives significantly less forgiving than liberals, and tough-minded conservatives nonsignificantly harder on him. Results are shown in tables 5.29.

Interestingly, despite its clear relationship to ideology, and to the "Andrew" question, r = -0.28, p = 0.035 one-tailed, based on N = 41, the "Doug" question, unlike "Andrew," was not significantly correlated with any psychological measure.

H20. Conservatives more than liberals will think that a child who is *being dominated* by another child on the playground is responsible for ending the bullying, while liberals will place relatively more of the responsibility on the bully.

We continue with the theme of "who's responsible for an unfortunate occurrence?" Admittedly, this hypothesis is suggestive of political debate, as the bullied child is easily analogous to downtrodden subpopulations for whom liberals supposedly advocate. However, it is not presented as political, but asks only for an opinion about which kid on the playground is responsible for an unfortunate incident. If a difference between liberals and conservatives is found, at least we can say that the personal responsibility conservatives espouse is probably *not* limited to economic individualism—ideas about financial reward and desert—and instead is a more fundamental Panglossian perception that *whatever happens* is necessarily just, as people control their own fortunes.

It is also important to offer the caveat that subjects would have, just several questions earlier, answered the question about whether they themselves dominated others when they were in middle school. However, we can, of course, control for responses to that question.

The item itself reads as follows:

When one child physically dominates, or picks on, another (and no adults are around to stop it), which of the following most closely represents your opinion about this interaction?

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1. It's entirely the responsibility of the DOMINATED student to stand up for himself/herself, if he/she wants it to stop.
2. It's mostly the responsibility of the DOMINATED student to stand up for himself/herself. But it's also somewhat the responsibility of the DOMINATOR to stop on his or her own.
3. The two children have equal responsibility for ending the conflict
4. It's mainly the responsibility of the DOMINATOR to stop dominating. But the dominated child should at least try to stand up to the dominator.
5. It's entirely the responsibility of the DOMINATOR to stop dominating. The dominated child should not be obligated to take any action to end the conflict.

Table 5.30 presents zero-order correlations between ideological dimensions and responses to this question, re-coded to range from 0 to 1, where 1 is still the "liberal" expectation—more support for the *dominated* child. Indeed, all correlations run in the right direction, but fiscal and tough-minded ideology are most associated with favoritism toward one child or another. Furthermore, controlling for whether a participant dominated others in middle school does not interfere with the result for any of

Table 5.30. Correlations of support for the *dominated* child and placing responsibility for ending conflict on the dominator, with ideological dimensions.

Ideological dimension	Pearson r (p – value, one-tailed)
Fiscal ideology, by issue-positions	-0.18 (0.007)
Moral ideology, by issue-positions	-0.05 (0.23)
Military ideology, by issue-positions	-0.15 (0.017)
Tough-tender ideology, by issue-positions	-0.21 (0.002)
"Social" ideology by self-ID	-0.11 (0.06)
"Fiscal" ideology by self-ID	-0.008 (0.46)
General liberalism-conservatism, self-ID	-0.16 (0.015)
N=187, except bottom cell, N=176.	

the three significantly related dimensions of ideology—fiscal, military, tough-tender. In a regression (not shown) explaining ideology both with support for the dominator/ dominated child and the "did you dominate in middle school" question, support for the

dominator remains strongly significant ($p < 0.01$) for fiscal and tough-tender, and conventionally significant ($p < 0.05$) for military ideology (all one-tailed tests). What about controlling for *trait* dominance? The result is essentially the same. Support for the dominated child is still near-significant and properly signed in the fiscal, tough-tender *and* military ideology regressions when controlling for trait dominance ($p = 0.07$, 0.008, and 0.10, one-tailed, respectively.)

In short, this appears to be an appraisal of responsibility for ending a conflict, not an attempt to reconcile opinions about playground bullying with one's own predilection for dominating others, or having done so in the past.

But is it a compartmentalization-oriented result? It's theoretically plausible, because support for the bully in this case is predicated on a notion that each person is responsible for his own fortune or misfortune, a possible result of a mechanical matching-up of one person's desert and the consequences one faces, which I've suggested is a likely result of perceptual categorization strength. Put one way, the dominated child, his actions, and the consequences he suffers dwell together in a mental compartment, cut off from other considerations such as the notion that an end to his suffering might have appropriate origins outside his own control.

However, the categorization measures of sample 1 did not directly predict answers to this item. But the decisiveness component of Need for Closure did, with decisive closers favoring the dominator, $r = 0.17$, $p = 0.017$, two-tailed, so there would appear to be a psychology at play besides just trait dominance. (Decisive closure is not significantly correlated with any categorization measure in student sample 1.)

H21. Conservatives more than liberals blame Britney Spears for her own personal problems.

This hypothesis comes from one item out of a 5-item attempt to measure participants' endorsement of individualism in student sample 2. At the time of surveying the second student sample, I feared that the Feldman (1988) economic individualism scale was less a measure of individualism than a measure of anti-communist sentiment, and so I endeavored to construct a new scale.[7] Specifically, I wanted a measure of individualism which captured something more like *the extent to which a person is solely responsible for his own behavior, and for its outcomes and consequences.* This belief, I thought, would prove to be the product of a mechanistic and linear connecting of cause (one behavior) and effect (one outcome), giving us a conduit between categorization and fiscal ideology: strong categorization produces a simple view of cause and effect, which means one's behaviors are sole causes of one's outcomes, which means rewards and punishments are just, which means government shouldn't undo them.

Well, the five items scaled together poorly in student sample 2, so I treat them individually here. Each one measures, it seems, some concept that is plausibly a facet of individualism, but together, they don't add up to anything coherent.

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[7] I subsequently decided the Feldman scale did have enough items that were nonideological, or could be made so by removing a word or two, and use it elsewhere in this study.

The first individualism item up for discussion is a question that asked participants who had heard of her whether the pop-music superstar Britney Spears, who at the time of the survey was in headlines for drug abuse, repeated and failed attempts at rehabilitation, eyebrow-raising neglect of her children, drunken flashing of genitalia at the paparazzi, and what generally looked like a miserable life that had spun out of control, was personally to blame and hence deserving of her misery, or whether she had been swept up by forces larger than her, and hence not deserving of unhappiness.

Most participants felt Britney was somewhat to blame. With response options 1 (fully to blame) through 4 (fully a victim), 76% chose 1 or 2 with 1 the modal response drawing 44% of the subsample of 72.

However, the question did divide liberals and conservatives significantly or nearly so, especially along the tough-tender and fiscal dimensions, as shown by partial correlations in table 5.31, where participant sex is controlled (women were significantly more lenient toward Britney than were men).

Table 5.31. Partial correlations (controlled: sex) of blaming Britney Spears for her own problems with ideology measures

Variable	Correlation with blaming Britney	p – value (one-tailed)
Tough-tender ideology, issue positions	0.21	0.038
Fiscal ideology, issue positions	0.17	0.08
Moral ideology, issue positions	0.097	0.21
N = 72		

It's interesting that moral ideology is not significantly related to sympathy for Britney Spears, since her behaviors are conventionally "immoral." This makes it seem unlikely that ideology is the cause, rather than the effect, of whatever individualism concept the item is tapping. But it's still plausible that tough-minded political ideology guides generosity levels toward the superstar. So how does ideology perform, as opposed to psychological variables, in explaining feelings toward Britney? Not well. As the ordered logit in table 5.32 shows, feelings toward Britney are more strongly determined by attributionism and agreeableness (Ambiguity intolerance, Openness, and deliberative complexity are weak performers and are not included in the regression) than by ideology itself.

Attempt at replication in Tallahassee adults: The individualism series was administered to the Tallahassee sample. A scale was developed, but the "Britney" item was not included in it due to poor scaling. I will discuss the Britney-free individualism scale as part of the next hypothesis. Regarding Britney, the Stony Brook result is mainly replicated. This time, blaming Britney was a little less severe throughout the sample—only 62% of the sample chose the two most accusatory options. And this time women were not significantly more forgiving. But fiscal conservatives quite strongly blame her more than fiscal liberals do, and tough-minded conservatives blame her significantly

more too. As with the students, moral conservatism is only nonsignificantly related to blaming Britney for her woes. All these results are shown in table 5.33.

Table 5.32. Determinants of lack of sympathy for Britney Spears. Ordered logit coefficients.

Independent variable	Ordered logit coefficient (standard error)	p - value
Tough-tender ideology, issue positions	0.09 (0.31)	0.77
Attributionism	0.69 (0.38)	0.036
Agreeableness	-0.90 (0.38)	0.008
Participant sex	-1.58 (0.68)	0.02
N = 44		

Table 5.33. Correlations of blaming Britney Spears for her own problems with ideology measures, Tallahassee adult sample

Variable	Correlation with blaming Britney	p – value (one-tailed)
Tough-tender ideology, issue positions	0.23	0.04
Fiscal ideology, issue positions	0.41	0.0008
Moral ideology, issue positions	0.14	0.17
N = 55		

H22. More than liberals, conservatives believe their own efforts are what will keep them off government assistance; that survival depends on oneself rather than one's community; that an emotionally strong person doesn't lean on others in difficult times; and that life is a series of choices one makes that determine the outcome rather than an unpredictable journey.

These are the other four items intended for my original individualism scale, but which in student sample 2 did not cohere into a single scale, so I discuss them here individually. The first read, "If I am going to stay off government assistance to the poor for the rest of my life, it will be because of…" and offered two endpoint choices bracketing four response options. Endpoint 1 was "the fortunate combination of many factors and advantageous circumstances, for which I will be humbly thankful" and endpoint 4 was "my own efforts, determination, and skill, in which I will take a good deal of satisfaction."

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Clearly, the higher scores represent more "personal individualism," the brand of individualism I have sought to distinguish from Feldman's scale, which carries a strong dose of capitalist-versus-socialist system endorsement. Beginning with student sample 2, does this brand of individualism predict ideology? Yes, strongly. In XY-standardized regressions not shown, controlling for sex (which is nonsignificant), a one-standard-deviation increase in selecting "my own efforts" is associated with a 0.32- and a 0.34-standard-deviation increase in fiscal and tough-minded conservatism respectively, with one-tailed p – values of 0.003 and 0.002, N = 77.

What about moral ideology? It's the familiar pattern: right direction, weaker relationship, standardized $\beta = 0.17$, $p = 0.08$; but controlling for self-identified fiscal ideology, the coefficient doesn't even approach significance, so moral conservatives are probably more individualistic on this question largely because they self-identify as fiscally conservative.

Individualistic answers to this item are also strongly related to attributionism, as with the Britney Spears item (r = 0.42, $p = 0.002$, N = 47), and also, negatively, to Big-Five Openness (r = -0.21, $p = 0.036$, N = 77), but are uncorrelated with other psychological measures in the survey. Once again, as with the Britney series, in a regression (not shown) attempting to explain this "self-concerned individualism" with covariates attributionism *and* tough-tender ideology—a test of whether it's ideological beliefs rather than perceptual cognitive style driving the individualism—attributionism remains significant in the regression, but not ideology, suggesting that this strong belief in self-reliance is causally prior to the formation of an explicitly political "belief system."

The next item attempting to measure individualism read, "to survive and make it in this world a person needs to count on…" with endpoint options (1) "himself or herself above all—you can't rely on others to do it for you"; and (4) "the cooperation and support of those in the community around him/her." It really doesn't get more straightforward than this as a measure of nonideological personal-responsibility individualism. Either I'm an island and can do it all myself, or I'm not independent.

The correlations show that ideology is definitely related to this item, but surprisingly not tremendously strongly. Controlling for sex in standardized regressions, a standard deviation more self-reliance on the item predicts a 0.20-s.d. increase in fiscal conservatism ($p = 0.045$), a 0.24-s.d. increase in tough-minded conservatism ($p = 0.016$), and a 0.12-s.d. increase in moral conservatism, which again fails to approach significance when self-identified fiscal ideology is controlled for.

This individualism item was not correlated significantly with any cognitive or trait-based psychological measure, including conscientiousness, extraversion, dominance and Openness. This null finding is indeed a surprise, and I will leave it at that.

The third item is similar to the second except that rather than tapping the idealization of going it alone to "make it in this world," the refusal to recruit help becomes the definition of emotional strength. (Incredibly to me, the two items do not correlate significantly.) According to the item wording, "A person who is emotionally strong…" either (1) "is not embarrassed to recruit support from others in difficult times" or (4) "is well capable of getting through difficult times without having to lean on others." Clearly, the higher-scored option is the more individualistic.

The item relates to ideology exactly as the previous individualism items do, with individualism predicting tough-minded conservatism significantly (XY-standardized $\beta =$

0.25, *p* = 0.013), fiscal conservatism nearly so (β = 0.18, *p* = 0.06), and moral conservatism weakly if at all.

Psychological measures relate in a mixed way to this question. Those more intolerant of ambiguity and those higher in attributionism are more individualistic on this item, both rs = 0.32, *p*s = 0.002 and 0.013 (due to different Ns). So it would appear that these categorization-related psychological measures suggest that strong categorization should be associated with individualistic beliefs about what makes a person emotionally strong.

But this is not the case, and in fact the opposite is true. The general categorization strength measure from student sample 2 is significantly and *negatively* related to "emotional individualism." People who categorize *more* tend to answer that an emotionally strong person recruits support from others, r = 0.24, *p* = 0.036 two-tailed. Why might this be? Either this result is an accident, or there is something about the item that attracts categorizers to the less individualistic answer—perhaps the idea that an emotionally strong person is "not embarrassed." There is a clue that this interpretation is likely correct: the general measure of extraversion is correlated with general categorization strength, r = 0.24, *p* = 0.002, suggesting that strong categorizers are more assertive. If the item is tapping not so much individualism as a willingness to approach others, that could explain the anomaly.

The fourth attempt to measure individualism asked participants to indicate whether "life" was "a series of choices you make which determine the outcome" or "an unpredictable journey where you never know what's going to happen." This taps less individualism perhaps than a belief that we control our destinies with our choices, and I refer to the "stuff" the item measures as "consequentialism."

There is little to discuss with this item. High levels of cognitive deliberative complexity significantly predict the "unpredictable journey" answer (*p* = 0.006), and that answer, suggesting less individualistic control, is related to liberalism of all three dimensions (this time, fiscal the least strongly), but the significance levels are weak, (0.07 and 0.09 in one-tailed tests for tough-tender and moral ideology).

In sum, then, the several individual attempts to measure individualism, while failing to cohere into a single scale, mainly predicted ideology significantly or nearly so, and for the most part each seemed to be related to cognitive flexibility-and-rigidity variables in predicted directions, but with some inconsistency.

Tallahassee sample: Among Tallahassee adults, three of the items did scale well together. Counting on oneself versus others, staying off government assistance, and the idea that the emotionally strong do not lean on others formed a scale of individualism with α = 0.68. This scale relates to ideology in the Tallahassee sample essentially as the individual items related to ideology among the students: it strongly predicts tough-tender ideology, significantly but more weakly predicts fiscal ideology, and does not predict moral ideology in zero-order correlations. See table 5.34.

However, there's an interesting result. Controlling for tough-minded ideology, individualism is actually *negatively* and *significantly* related to moral conservatism in Tallahassee. In regression analysis not shown, it is apparent that this effect is accounted for by religious attendance. It looks as though the congregational nature of churchgoing strongly counteracts (and almost exactly cancels out) the conservative "learning" of individualism among the religious in North Florida.

As for psychological variables, deliberative complexity has the strongest relationship with individualism, with a significant zero-order correlation, r = -0.26, p = 0.023 one-tailed, indicating the more deliberatively complex are less individualistic. All categorization strength measures are related in the predicted direction at better than p = 0.1, and Ambiguity Intolerance, Openness, and attributionism are all related in the predicted direction, but more weakly.

Table 5.34. Correlations of three-item personal individualism scale ideology measures, Tallahassee adult sample

Variable	Correlation with personal individualism	p – value (one-tailed)
Tough-tender ideology, issue positions	0.35	0.004
Fiscal ideology, issue positions	0.24	0.034
Moral ideology, issue positions	-0.03	0.84

N = 58; p – value for moral ideology two-tailed because coefficient signed in unexpected direction

The item asking whether life is a series of meaningful individual choices or an unpredictable journey, a weak performer in Stony Brook, was a much stronger predictor of ideology in Tallahassee. Seeing life's choices as determinants of life's outcomes was positively related to moral conservatism (r = 0.37, p = 0.002), tough-minded conservatism (r = 0.29, p = 0.011) and fiscal conservatism (r = 0.17, p = 0.096), among N = 58 participants, all tests one-tailed. A good deal of the relationship between this outlook and moral conservatism is due to religiosity: very possibly, people inferred that these "choices" were moral ones which would result in positive or negative *eternal* outcomes!—although moral conservatism is, controlling for religious attendance, still related to the choices-determine-life outlook, as shown in the regression of table 5.35.

Table 5.35. Explaining moral ideology (issue positions, standardized) by consequentialist outlook. OLS coefficients.

Independent variable	Ordered logit coefficient (standard error)	p – value
Religious attendance (0 to 1)	1.23 (0.34)	0.0005
Belief that life is series of choices that control outcome (0 to 1)	0.88 (0.46)	0.033
Constant	-1.50 (0.34)	0.000

N = 58, R^2 = 0.30; p – values one-tailed except constant

Interestingly, only one "psychological" variable was significantly related to "consequentialism": categorization strength. The main general measure, in particular, was correlated at r = 0.27, p = 0.021 one-tailed, N = 58. Ambiguity intolerance was correlated with consequentialism at 0.25, but nonsignificant due to a small N of 26.

In sum then, the Tallahassee sample yielded similar results to the Stony Brook sample. A very personal individualism, scrubbed of any overtly ideological content, does separate liberals and conservatives of varying dimensions—particularly the secular ones—and is also related to cognitive flexibility measures including categorization strength.

H23. In an alternate categorization-strength test, when people are asked to perform a kind of "free association" in which they are given an object and are asked to name some other object that comes to mind, liberals will free-associate "farther away," to a more different object.

If categorization strength works as theorized, then given any concept—for simplicity let's say a physical object—and asked to name some other object that springs to mind, weak categorizers, with more interconnections in an associative network of concepts, will sample from a wider group of objects that includes more dissimilar and less category-central ones. Surely, given the word "paperclip" and asked to name something similar, almost everyone, strong and weak categorizer alike, is more likely to name a similar-sized metallic object—say, "key" or "fishhook"—than a very different one. But a more distantly "connected" object, while still unlikely to spring to a weak-categorizer's mind, is virtually guaranteed not to spring to a strong-categorizer's mind, in which it might even be inhibited from doing so.

Based on this thinking, I devised an alternate categorization test. Subjects were told first that the computer would give them the name of an object, and they were to respond by typing in the name of some other object that sprang to mind as being related—anything other than the given object itself. The relationship could be physical similarity, the use of one object by the other, or anything else. They were simply to make a quick association and type in the name of a different object. And they were told they would see several word associations in a row.

Subjects were given the first word—call it word A_{given}, and responded by typing in word $A_{response}$. After responding to A_{given}, subjects were given three other "distracter" words to which they responded with three more free-associations. The next word they were fed was $A_{response}$, to which they responded with a word I will call $A_{response-two}$. A few words later, they were fed $A_{response-two}$, to which they responded with $A_{response-three}$.

The hypothesis is that by this time subjects have had a chance to "associate away" from the original word A_{given} considerably. And liberal subjects should have associated *farther away* than conservatives.

Only a very small subset of students from Student Sample 2 performed this task—N = 31. There were 4 original "given" words, and hence four final "response-three" words, constituting four separate tests. The four original given words were "earthworm," "compact disc," "paper plane," and "paperclip."

I coded the ultimate "response-three" words for their level of similarity to the "given" word. Quite obviously, there are dangers to having the author perform the

coding, so I took several steps to ensure that I did not bias the results. First, I constructed 7 levels of similarity between the final response and the given word, and defined them rigorously. Maximum similarity—coded 6—indicated that the final response was, in fact, the original word. Code 5 indicated that the final word was some synonymous variant of the original word—*i.e.,* if the given word was "earthworm" and the final response was "worm." Code 4 indicated the two words described objects of similar size, material, flexibility, and so forth.

Additional distinctions were made if, for example, the original given word was an animal: where "earthworm" was the given word, "snake" was deemed more similar than "rope" because, though "snake" and "rope" are both somewhat larger than an earthworm and are both similarly flexible, the snake is also an animal. Code 0 indicated that there was no discernible similarity at all—for example, the given word was an object and the final word was a nonphysical concept, such as earthworm: freedom. Readers may contact the author for fuller notes on the rules used.

Further precautions were taken to assure that I was not biased. First, and most obviously, I coded the words without knowing the subjects' ideology. Moreover, after coding final responses to "earthworm," I scrambled the order of the 31 subjects for coding responses to "compact disc" so that I could not learn, say, that "the third subject always seems to associate farther away," which could have subtly biased me. In short, there was absolutely no possible way that I could have guessed, while coding, which subjects were more liberal or conservative, or which subjects had associated farther away on previous tasks.

I seem to have done a good job of gauging individuals' tendency to "associate far away" because of the four tests, three of them scaled together well—earthworm, compact disc and paperclip—to form a reliable scale of "distant association," $\alpha = 0.78$.

Looking then at results, using this scale, do liberals associate farther away from originally given words than conservatives do? It looks as though they do—but the finding is nuanced, so follow along closely.

Table 5.36. Correlations of distant association with ideology measures

Correlation of distant-association rating with…	Pearson coefficient	*p – value*, two-tailed
Fiscal ideology, issue-positions	-0.08	0.66
Tough-tender ideology, issue positions	-0.13	0.47
Moral ideology, issue positions	0.04	0.82
General liberalism-conservatism, self-ID	0.26	0.16
Fiscal liberalism-conservatism, self-ID	0.18	0.34
"Social" liberalism-conservatism, self-ID	0.30	0.09

N = 32, except "general" ideology, self-ID, N = 30.

First, a correlation table, table 5.36, actually suggests the opposite result. While "far association" is nonsignificantly related to fiscal and tender-minded liberalism when measured by issue positions, it's nonsignificantly related to *moral conservatism* when measured by issue positions, and it's nonsignificantly and *more strongly* related to every

measure of self-identified conservatism! Are conservatives associating to objects more distant than liberals are?

No, that's not what's happening. The surprising results for the self-identification scales—at least for the fiscal and general ideology scales—are driven *entirely* by the fact that moderate liberals associate farther away than extreme liberals in the tiny sample. (Indeed, among self-identified fiscal conservatives, far association is very, very slightly associated with more moderation, *i.e.,* liberalism.)

If we dichotomize the measures of self-identified liberalism and conservatism, so that we are simply measuring whether participants label themselves on one side or the other side of the liberalism-conservatism divide, the correlation between general self-identified liberalism-conservatism and far-association is reduced from 0.26 to 0.00, while the correlation between self-identified *fiscal* liberalism-conservatism and far-association actually flips signs, to r = -0.12. The self-identified moral ideology-far association relationship remains positive but is reduced to nonsignificance, r = 0.20, *p* = 0.28. Among these 31 participants, then, self-identified liberal extremists seem to categorize more than liberal moderates do if indeed distant-association indicates weak categorization strength.

But controlling for their self-identification, liberal *thinkers* in the tough-tender dimension significantly associate farther away than conservative thinkers do, and liberal thinkers in the fiscal dimension very nearly do so as well, as shown in the logits of tables 5.37 and 5.38. Here, I have dichotomized the measure of issue-based ideology by coding people 0 who are more liberal than the mean, and 1 if they are more conservative than the mean.

The negative and significant or near-significant coefficients for far association indicate that, controlling for self-identification (which is, here, functioning largely as a control for self-identified liberal extremism), associating to objects more dissimilar to a given object is associated with being a more fiscally liberal or tender-minded thinker *on the issues.*

Table 5.37. Dichotomous measure, tender-minded liberalism (0) or tough-minded conservatism (1), measured by issue positions; logit coefficients

Independent variable	Logit coefficient (standard error)	*p* – value (one-tailed)
"Far association"	-0.57 (0.30)	0.03
Self-identified fiscal liberalism-conservatism	3.33 (1.77)	0.03
Constant	0.12 (0.897)	0.897
N = 32, psuedo-R^2 = 0.16; sig. test for constant two-tailed		

The same analysis run on moral ideology yields null results: the coefficient for distant-association is positive but nonsignificant (*p* = 0.31, two-tailed), implying that maybe, just maybe, moral conservatives associate farther away than moral liberals.

Table 5.38. Dichotomous measure, fiscal liberalism (0) or conservatism (1), measured by issue positions; logit coefficients

Independent variable	Logit coefficient (standard error)	p – value (one-tailed)
"far association"	-0.44 (0.30)	0.07
Self-identified *general* liberalism-conservatism	2.00 (1.80)	0.13
Constant	0.30 (0.89)	0.735

N = 30, psuedo-R^2 = 0.07; sig. test for constant two-tailed

This result, obviously, is less of a surprise than one might think in light of the overall findings of this dissertation—for cognitive flexibility-rigidity turns out to be far more convincingly related to the secular ideological dimensions than to the moral dimensions, over and over again.

In sum, with a tiny N of about 30, there is some tantalizing evidence that holding more liberal opinions on secular issues is associated with (caused by, according to C-theory) weakness of categorization, which is detected in the extent to which people "free-associate" away from commonplace objects to more far-flung and dissimilar objects. There is no question that this task should be repeated in future research.

One apolitical asymmetry hypothesis that completely, totally, utterly wasn't supported…

All of the 23 asymmetry hypotheses above were at least modestly supported. But some asymmetry hypotheses caused me to design tests which flat-out failed. One was totally apolitical and so belongs in this chapter, just below. Any others will be discussed at the end of chapter 6.

H24: Conservatives more than liberals will perceive tennis players, depicted in a photograph on the opposite side of the net from the perspective of the survey participant, more as "my tennis opponents" than as "my tennis partners"; and conservatives more than liberals will also perceive people playing tug-of-war on the beach more as two opposed teams rather than one group of people playing together.

These two items were similar to the items searching for a tendency to see hierarchy. But in this case, the question was whether conservatives see opposition, competition, or conflict where liberals do not. In the first item, participants were shown the picture in figure 5.5, and in the second, the picture in figure 5.6. Participants were asked to indicate whether, in the first case, they saw tennis opponents or tennis partners, and in the second case whether they saw two opposing teams or one single group playing

Figure 5.5. "The tennis item"

Figure 5.6. "The tug-of-war item"

a game together. It seems that the two items both do tap a tendency to see competition, as in the second student sample they intercorrelate at 0.48, $p = 0.002$, based on an N of 39 (each subject had a 0.3 probability of seeing each item; 54 answered the tennis item, 53 answered the tug-of-war item, and 39 answered both).

However, neither item was even slightly related to ideology in *either* the first or the second student sample, so the finding here is entirely null. Moreover, none of the personality or psychological variables (including categorization) predict responses to this question, so it appears that seeing competition or cooperation in these photographs seems to have been largely random, or the result of effects for which I had no measure.

Tallahassee sample: Here we have a surprise finding in the opposite direction from the expected. While moral and fiscal conservatism are entirely unrelated to seeing competition in the photos, at near-significant levels, seeing competition does predict tender-minded *liberalism*, $r = -0.24$, $p = 0.06$ two-tailed among a random subsample of 58. Not significant, but it doesn't look entirely like random sampling error either, as among this same subsample deliberative complexity is *positively* related to seeing competition too, $r = 0.36$, $p = 0.005$, two-tailed.

Whatever sort of "effect" this is, it's not even slightly related to categorization strength. All categorization strength measures positively correlate with seeing competition, but none more strongly than $r = 0.05$, $p = 0.70$. It was surprising to me that any cognitive flexibility measure would be related to seeing "competition over oneness," so I wondered whether the modal answer to the tennis and tug-of-war questions was oneness—that is, that almost everyone goes for "oneness" as the "obvious" answer but a few who are very open to alternate possibilities use their "imagination" to see a level of competition that is nonobvious. However, in all three samples studied, the modal answer to both questions was to see *competition*. In fact, for the tennis question, Student sample1, student sample 2, and the Tallahassee sample all had 80% of respondents indicate that it was their tennis opponents they saw. Proportions on the tug-of-war question were also very similar across samples.

The implication of this is that the anomalous Tallahassee result may be a random one after all. If either integrative complexity *or* political ideology were truly related to seeing competition in the photos, then the proportion of people seeing competition should differ across samples, because (a) the Tallahassee sample is more conservative, and because (b) deliberative complexity, by pushing Tallahasseeans but not Long Islanders to see competition, would likely have altered the proportions. In other words, where there's a systematic effect on a variable in one population but the variable is randomly determined in another, it's unlikely that the variable would be distributed identically in the two populations.

Chapter 6

Asymmetries, part 3: Behavioral differences with tangential political relevance but no ideology content

This chapter continues with curious asymmetries between liberals and conservatives. But whereas the asymmetries of chapter 5 consisted of behaviors that were entirely nonpolitical, the behaviors in focus here either occur within a nominally political setting, or have some tangential relevance to politics. For example, I may run hypothetical political candidates against each other, or mention political groups within the question. However, the behavioral differences we seek in this chapter still have nothing to do with the content of ideology or political doctrine. As with the last chapter's differences, they were generated against a background theory of cognitive strong and weak categorization, so we shall see whether the asymmetries continue to suggest a connection between ideology and the cognitive flexibility phenomenon.

H1. Conservatives, relative to liberals, view the opposite ideology's opinions as more "flat wrong," while liberals, relative to conservatives, view the opposite side's opinions as less completely wrong, or more just the result of a different perspective.

This hypothesis is not apolitical, but the difference between liberals and conservatives, if found, would be. It has nothing to do with issue positions, and simply states that, given that the two sides disagree, being more conservative is associated with regarding the other side as more categorically wrong-headed.

How a categorizing cognitive style might produce such an asymmetry is clear. Arguments and opinions either fall into the categories of being correct or incorrect— or perhaps they do not fit neatly into such categories, and may contain aspects of rightness and wrongness, or none of either. Or perhaps a strong categorizer could label people themselves as being more generally right or generally wrong about things. Moreover, strong compartmentalizers may simply never get around to imagining what an alternate perspective would look like (it doesn't "invade" their "correct opinion schema"), or may regard alternate perspectives on issues as cartoonish or too alien to be taken seriously.

To test this hypothesis, participants were asked to "remind" the survey-giving computer whether they considered themselves generally liberal or generally conservative. Then, liberals were asked,

> OK, so if you're liberal, then how would you characterize the opinions of conservatives?

Conservatives were shown the same wording with the words *liberal* and *conservative* swapped. All were given as response options,

1. Flat wrong about pretty much everything
2. Usually wrong about things, but there are some exceptions
3. Right about a lot of things, but wrong about a lot too
4. Not really "wrong" about things if you look at things from their perspective, but I just have a different perspective.

The expectation, then, is that conservatives will score *lower* on the question. Do they? Yes. The zero-order correlational results, with ideology measured by issue-position indices, are shown in table 6.1.

Some additional discussion: first, self-identification as fiscally conservative is essentially uncorrelated with answers to this question—and running the analysis even produces a Pearson's r that's in the wrong direction, r = 0.023. Controlling for self-identification as fiscally conservative, *thinking* more fiscally conservatively is quite convincingly associated with thinking the other side categorically wrong, as shown in the ordered logit of table 6.2.

Table 6.1. Correlations of answering that the "other side's" opinions are not always wrong, but the result of a different perspective, with ideological dimensions, measured by issue positions

Ideological dimension	Pearson r	p – value, one-tailed
Fiscal ideology	-0.14*	0.04
Moral ideology	-0.18*	0.014
Tough-tender ideology	-0.14*	0.04
Military ideology	-0.136*	0.045
Self-identified fiscal ideology	0.023	0.780

*$p < 0.05$, N = 156 (independents excluded from analysis)
Note: p – value for self-identification two-tailed because coefficient signed in the wrong direction

Second, some may have noticed that the strongest zero-order correlation between the "flat wrong" question and ideology is with *moral* ideology. Does this mean that fiscal ideologues are not *independently* categorizing liberals as flat wrong? Do they only appear to be doing so because they are also morally conservative? No. Adding self-identified "social" conservatism to the ordered logit of table 6.2 leaves the coefficient for fiscal ideology by issue position still negative and significant at $p = 0.057$ in a two-tailed test.

Table 6.2. Answering that the other side's opinions are
***not* flat wrong, ordered logit.**

Independent variable	Ordered logit coefficient	Std. error	p – value, two-tailed
Fiscal ideology by issue position	-0.53	0.219	0.016
Self-identified fiscal ideology (0 to 1)	0.403	0.901	0.654
N=156, Pseudo-R2: 0.03			

There is a null result to report that relates to this finding. After the "flat wrong" questions was asked, subjects were asked whether, when someone from the other side expresses an opinion that the participant disagrees with, it really appears to that person that they are right, or whether they "know, deep down" that they are wrong. The expectation was that conservatives would be more likely than liberals to indicate that the other side "knows deep down" that they are wrong. However, answers to this question were uncorrelated with any dimension of ideology I measured.

On the other hand, in another related question, subjects were asked whether the other side should be proud of their beliefs, ashamed, or neither, with the prediction, for the same basic reasons given above, that conservatives would, more than liberals, consider the other side shame-worthy. The zero-order Pearson's r coefficient was in the right direction for all dimensions—issue-based and self-identified—but only attained significance for issue-measured moral conservatives, r = 0.18, p = 0.011, one-tailed. That is, moral conservatives appear to believe liberals should be ashamed of their beliefs more than moral liberals believe conservatives should be ashamed of theirs.

H2. Conservatives will be less interested than liberals in hearing an opposing point of view.

This prediction follows from C-theory simply on grounds that a compartmentalizing cognitive style represents an attitude on an issue as a permanent attitudinal endpoint rather than an evolving, living viewpoint subject to revision due to new information "leaking in." An attitude is in a way "sealed in a compartment/category" with all its attendant considerations (to borrow the Zaller-Feldman language), and there is no room for, and no interest in the discovery of, "new considerations."

To test the hypothesis, subjects from student sample 1 were asked first to state their opinions about two issues: whether current punishments for crime were harsh enough to constitute deterrence, and whether marijuana should be legalized. Having

thus indicated two opinions, subjects were informed that "the computer" was in possession of a short essay written by an expert who disagreed with *one* of the two positions the subject had just taken. Subjects were simply asked whether they would like to read this short essay—yes or no. The essay itself did not exist, and those who indicated interest in reading it were simply told that it would be presented later in the survey. It never was.

This might strike some as nothing other than a proxy measure of open-mindedness or intellectual curiosity, and perhaps it is (Point-biserial correlation of this two-point measure with FFM Experiential Openness was a robust 0.32, p = 0.0000). However, it has the advantage of not being a report of self-perception: it is an actual measure of behavior. This places it at an additional remove from ideology, I believe: it would not be merely that liberals like to say that they are open to new information in keeping with a self-concept as liberal; it would be that they actually seek it more than conservatives do.

However, we can also go a step further and control, at least noisily, for intellectual curiosity, which quite obviously would be expected to predict an interest in reading the opposing essay. My proxy measure for curiosity is political knowledge, comprised of four basic questions about modern politics—who is the Vice-President (it was Dick Cheney at the time), which party controls the Senate (Democrats), which of several names sits on the Supreme Court (Scalia), and who is secretary of defense (at the time it was Donald Rumsfeld; in later questionnaires it was Robert Gates). The measure was recoded to range from 0 (no answers correct) to 1 (all answers correct).

So, controlling for knowledge and the sex of the participant, do conservative thinkers shun the opposing essay more than liberal thinkers do? Yes, it appears so, though not terribly strongly—and we must except fiscal conservatives, who do not differ from fiscal liberals. Logit is performed in table 6.3, predicting the choice to read the survey with several dimensions of ideology.

Results are not shown for fiscal ideology, whose coefficient in the same regression is 0.02, p = 0.861, two-tailed. From the table it does appear that taking pro-American military positions, such as favoring stronger military, favoring the Iraq war and favoring Israel against the Palestinians (and also being pro-death penalty) is associated with not caring to read an opposing opinion about a separate issue. Not quite as strongly, moral conservatism was associated with shunning the opposing view. It should be noted that the two issues on which subjects gave an opinion—marijuana legalization and harshness on crime—are rather closely related to the moral dimension and the "military dimension" of ideology, so it could still be possible that for *any* domain of ideological thinking, being conservative is associated with not wanting to hear opposing opinions *within that domain*, but I have no data to suggest whether fiscal ideologues might have reacted more strongly were the issue an economic one. What we do have, of course, is evidence that fiscal conservatives, whether they hear an opposing view or not, aren't as likely to change their minds (recall the asymmetry regarding persuadability from chapter 5).

**Table 6.3. Decision to read survey opposing one's point of view,
logit coefficients, Student Sample 1.**

Independent variable	Coefficient	Std. error	p – value, one-tailed (except two-tailed for respondent sex)
Logit 1			
Moral ideology	-0.23	0.157	0.071
Political knowledge	0.31	0.146	0.018
Sex of respondent	-0.33	0.321	0.304
N=183, pseudo-R^2 = 0.041			
Logit 2			
Military ideology	-0.29	0.157	0.035
Political knowledge	0.29	0.147	0.022
Sex of respondent	-0.31	0.32	0.326
N=183, pseudo-R^2 = 0.036			
Logit 3			
Tough-tender ideology	-0.15	0.15	0.17
Political knowledge	0.34	0.15	0.011
Sex of respondent	-.28	0.32	0.381
N=183, pseudo-R^2 = 0.031; constant terms not reported			

Replication attempt: This item was administered to the Tallahassee adult sample, with almost identical results shown in table 6.4. This time, fiscal conservatives were *nearly* significantly less willing to read an opposing opinion. But tough-minded conservatives and moral conservatives were significantly less interested than their liberal counterparts in seeing an opposing view.

Table 6.4. Decision to read survey opposing one's point of view, logit regression, Tallahassee Adult Sample.

Independent variable	Coefficient	Std. error	p – value, *two*-tailed (except for ideology)
Logit 1			
Fiscal ideology	-0.61	0.38	0.055
Political knowledge	-0.18	0.28	0.526
Sex of respondent	-1.24	0.61	0.040
N=80, pseudo-R^2 = 0.06			
Logit 2			
Tough-tender ideology	-1.09	0.41	0.003
Political knowledge	-0.33	0.30	0.283
Sex of respondent	-1.31	0.63	0.036
N=80, pseudo-R^2 = 0.12			
Logit 3			
Moral ideology	-0.66	0.35	0.030
Political knowledge	-0.19	0.29	0.515
Sex of respondent	-1.01	0.58	0.080
N=80, pseudo-R^2 = 0.07; constant terms not reported			

H3. Conservatives more than liberals will assert that conservatives and liberals are fundamentally different sorts of people.

This was a single five-response item administered to the entirety of student sample 2, allowing participants to assert that liberals and conservatives are (1) basically the same kinds of people, but just holding different opinions; or (5) that liberals and conservatives are fundamentally different sorts of people; or three points in between. The prediction is simply that if conservatives categorize the world more strongly, they should categorize themselves and liberals more distinctly. And they do—especially along the fiscal and tough-tender dimensions. Simple correlations should establish this unequivocally; see table 6.5.

Table 6.5. Correlations of ideological dimensions with perception that conservatives and liberals are fundamentally different sorts of people.

Ideological dimension	Correlation with perception libs and cons different sorts	p – value (one-tailed)
Fiscal ideology, issue positions	0.24	0.0007
Tough-tender ideology, issue positions	0.22	0.0016
Moral ideology, issue positions	0.07	0.18

N between 165 and 169, depending on ideological dimension

An interesting side question is, of course, whether conservatives are right bout this! Are conservatives and liberals different sorts of people? Although I do not take sides on ideological squabbles in this dissertation, I can make an exception and take sides here: all evidence indicates conservatives are right and liberals are wrong on this question: conservatives and liberals are quite different sorts.

H4. When offered a choice between a leader who is "assertive" and a leader who is "kind-hearted," conservatives more than liberals will prefer the assertive leader.

This hypothesis is the first I'll be discussing that are tested by a series of mock elections. Subjects were offered several choices between two candidates in which the candidates were described in terms that had nothing to do with issue positions or partisan labels. Rather, the candidates are described in terms of personality traits or some idiosyncratic behavior which has no ostensible connection to ideology.

The idea behind this particular hypothesis is that people who categorize strongly will prefer a leader who does also, and that cognitive categorization facilitates assertiveness as outlined previously in this dissertation (while a lack of categorization *might* be associated with interpersonal empathy). As I've said, this assertiveness-categorization link probably implies, at least theoretically, a fiscal ideology-categorization link more strongly than a moral ideology-categorization link, although it must be acknowledged that moral conservatives in student sample 1 seem the more dominant. Theory regarding moral conservatives, however, is slightly different: as the reader knows, I am building a theory that moral conservatives have a special psychological profile such that, while they may only see the world in slightly more categorical terms than moral liberals, they especially seek leaders who categorize with certainty.

To this theory about moral conservatives, however, the test of this particular hypothesis will be quite unhelpful. This item's only result is one which runs powerfully in the opposite direction from prediction. Elsewhere, we will find moral conservatives expressing strong preferences for leaders who are certain, but when they're offered this *particular* choice—between assertiveness and kind-heartedness— they choose the kind-hearted leader more often than moral liberals do, and significantly. Reading this result together with other results from this study, it seems likely that moral ideologues did not view assertiveness in the context of this question as equivalent to certainty, nor kind-heartedness as equivalent to waffling, as well perhaps they shouldn't have. Probably, moral conservatives, themselves apparently no less kind-hearted than liberals based on trait findings, were following a conventionally moral, even biblical, notion that kind-heartedness is a superior quality. Elsewhere in this research, when they are offered a choice between candidates who show decisive closure and candidates who revisit decisions, or who make more "fuzzy" decisions subject to multiple interpretations, moral conservatives will, more often than moral liberals, choose the more decisive leaders.

A bit more about these mock elections before results are reported: The elections were presented one after the other in one section of the survey. Their order was randomized. Respondents made a simple, dichotomous choice—candidate A or candidate B. Also, respondents were under mild time pressure: they had 15 seconds to make each choice, to minimize overthinking. If they recognized a quality (something, hopefully, related to cognitive categorization or compartmentalization) in a candidate which matched their own preference or their own personality, I wanted that initial recognition to control the choice, not more complex deliberations. Finally, for each election, respondents were electing someone to hold a particular "office," which could range from a political office to something less "official"—such as, for example, chairperson of an organization the subject might belong to.

For the assertive-versus-kindhearted election, subjects were told, "You are electing: MAYOR OF YOUR TOWN." The point-biserial correlational results are shown in table 6.6.

Table 6.6. Point-biserial correlations between electing a candidate described as either "assertive" or "kindhearted", and dimensions of ideology, measured by issue positions. Student sample 1.

Ideological dimension	Point-biserial correlation with mayoral choice (0=assertive, 1=kindhearted)	p – value, two-tailed
Moral ideology	0.19	0.008
Fiscal ideology	-0.04	0.609
Tough-tender ideology	-0.03	0.683
Military ideology	-0.04	0.566
N=180		

There is evidence that the significant coefficient here is indeed largely a result of a religious, possibly deliberately "biblical," outlook. In a logit regression of mayoral choice on moral conservatism, measured by issue positions, controlling for religious attendance (table not shown), religious attendance significantly predicts preference for the kindhearted mayor ($p = 0.014$, two-tailed), while the coefficient for moral ideology is reduced to nonsignificance ($ß = 0.17$, $p = 0.338$).

What *does* predict a preference for the assertive mayor, in the predicted direction, is Categorization strength. In student sample 1, general categorization strength is negatively correlated with the kindhearted-mayor preference, r = -0.23, $p = 0.03$, two-tailed. Categorization strength, that is, seems in student sample 1 to cause both secular ideology (as we'll see in the next chapter) *and* a preference for assertive leadership.

Attempt at replication: A tiny subsample of student sample 2 (N=30) answered this item, and the results were null, although the preference for the kindhearted leader was again moderated by the type of ideology: moral conservatives barely preferred the kind-hearted leader (r= 0.02), while fiscal and tough-minded conservatives nonsignificantly preferred the assertive leader (rs = -0.14 and -0.21). Other aspects of the above analysis were mostly replicated. The preference for a kind-hearted leader was positively associated with church attendance (r = 0.29), and cognitive-flexibility measures Experiential Openness (r = 0.37), deliberative complexity (0.26, ns), and negatively associated with rigidity measures AI and attributionism (-0.30 and -0.27). Categorization strength itself was unrelated.

H5. Conservatives will favor a leader who sees humans and animals as "fundamentally different," so that "they should be treated fundamentally differently," while liberals comparatively will favor a leader who sees humans and animals as "fundamentally the same," so that they "should have many of the same rights."

Well, apparently my attempts to scrub this item of doctrinal content failed. In July of 2009, just as I was finishing this dissertation, Republican Senator Sam Brownback introduced a bill that would ban the formation of part-human, part-animal hybridized creatures! It had 18 Republican co-sponsors—and one Democrat. If this bill is passed, our U.S. statutes will hold *officially* that humans and animals are, and must forever be, fundamentally different, and I know we'll all rest easier for it.

In truth, this is a poorly written item, because to keep the election clean of any ideological content, the candidates—in this case, participants are electing "YOUR STATE GOVERNOR"—should not endorse explicit policy positions. But as I wrote it, they do in fact take positions on giving animals some of the same rights as humans. This, of course, sounds a good deal like Universalism—the Schwartz value—which is to say it sounds a lot like *liberalism*.

So the item is not ideal, but it's worth reporting the result because until Senator Brownback saved the world from Minotaurs, I wasn't familiar with any actual liberal or conservative doctrine that states how different animals are from

humans, or that endorses a general policy of extending or limiting animal rights. I would be surprised if liberals and conservatives could not agree that animals deserve at least some rights, so if liberals and conservatives differ on this item, it seems likely that they are not simply going to the file drawer and using their vast knowledge of official ideological doctrine regarding animal rights, but are basing their decision on a feeling of kinship with the gubernatorial candidate based on his view of animals as categorically different, or not, from humans.

The statistical results are unambiguous, as shown in table 6.7.

We are not, incidentally, at a total loss in trying to subtract out the portion of variance accounted for by purely doctrinal support for animal rights. If liberals choose the "animals-are-same" governor simply because they know that's the "correct" answer for a liberal, then their self-identification as liberal or conservative should act as a proxy for their general endorsement of an entire ideological program that includes animal rights. In table 6.8, gubernatorial choice is regressed, using logit, on issue-based fiscal ideology, respondent sex, and self-identification as *either* liberal *or* conservative.[1] (Note that this dichotomous self-ID measure leaves independents out of the analysis.)

Table 6.7. Point-biserial correlations between electing a candidate who sees animals and humans as fundamentally different or fundamentally the same, and dimensions of ideology, measured by issue positions.

Ideological dimension	Point-biserial correlation with gubernatorial choice (0=animals and humans different, 1=same)	p – value, two-tailed
Moral ideology	-0.26	0.004
Fiscal ideology	-0.19	0.008
Tough-tender ideology	-0.09	0.306
Military ideology	-0.12	0.100
N=176		

As table 6.8 shows, with this control and with an additional control for respondent sex, fiscal liberalism still maintains a significant relationship with preference for governor who sees humans and animals as the same. And as for moral conservatism, with similar controls, and an additional one for religious attendance to

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[1] The reason I choose this dichotomous control rather than the 7-point measure is that the 7-point measure represents an unfair test of the effect of fiscally ideological *thinking*, since the latter is likely to be a powerful *cause* of graded measures of self-identification. My assumption is that if one labels oneself as liberal, this alone is sufficient to give an individual an opportunity to endorse animal rights for doctrinally ideological reasons.

control for the possibility that moral conservatives are merely following biblical prescriptions for human "dominion" over animals, the relationship also appears to hold, but not quite at conventional significance. Ultimately, it appears that both moral and fiscal ideologues prefer the "correct" governor for reasons beyond doctrine adherence: it's psychological.

Table 6.8. Preference for "humans-and-animals-are-same" governor, logit.

Independent var.	Logit coefficient	Std. error	p – value
Fiscal ideology regression			
Fiscal ideology by issue positions, conservatism higher	-0.51*	0.226	0.013
General self-ID as liberal (0) or conservative (1)	-0.71*	0.43	0.051
Respondent sex (0=male, 1=female)	1.6**	0.8	0.000
N = 150, pseudo-R^2 = 0.17			
Note: p – values one-tailed for ideology variables, two-tailed for sex			
Moral ideology regression			
Moral ideology by issue positions, conservatism higher	-0.32	0.257	0.101
General self-ID as liberal (0) or conservative (1)	-0.69	0.456	0.065
Respondent sex (0=male, 1=female)	1.56**	0.38	0.000
Religious attendance (0 to 1)	-0.26	0.70	0.355
N = 150, pseudo-R^2 = 0.15			
Note: p – values one-tailed for ideology variables and religious attendance, two-tailed for sex			

**$p < 0.01$, * $p < 0.052$

After all that, is there any evidence that the preference for an animals-are-fundamentally-different governor is associated with cognitive rigidity? There is some, yes. Categorization measures are uncorrelated with this variable, but the dimension of "need for closure" relating to the "need to know"—as in the need to know what others are thinking, or what to expect—is fairly convincingly and positively related to

the desire for the animal-and-human-*separating* governor, r = 0.20, *p* = .004 one-tailed.

     Attempt at replication: This item was administered to a tiny (N=30) subsample of student sample 2, and the results constitute, in the main, a replication. Preference for a governor who separates humans and animals is correlated with fiscal, tough-minded, and moral conservatism, with respective rs 0.15, 0.23, and 0.21, with one-tailed *p* – values between 0.11 and 0.21. Categorization is not significantly correlated with the preference, but "deliberative complexity," is strongly related to this preference, r = -0.34, *p* = 0.03, indicating that people who perceive simpler, more mechanical cause-effect patterns prefer a governor who sees animals and humans as quite distinct.

H6. Conservatives prefer a politician who keeps his driveway neatly edged to one who allows leaves and grass to encroach on it.

     Subjects were shown photos of yard-driveway edges from two homes, both photos snapped by the author and shown in figure 6.1. One was a very neatly edged driveway from the author's neighborhood. The other driveway was…um…the author's. Subjects were asked to elect, for "YOUR REPRESENTATIVE IN THE U.S. CONGRESS," either "Candidate A: someone who doesn't mind letting grass and leaves encroach on his driveway (see picture below)" or "Candidate B: Someone who keeps his driveway neatly edged (see picture below)."

Figure 6.1. Electing candidates based on their driveways

Candidate A's driveway   Candidate B's driveway
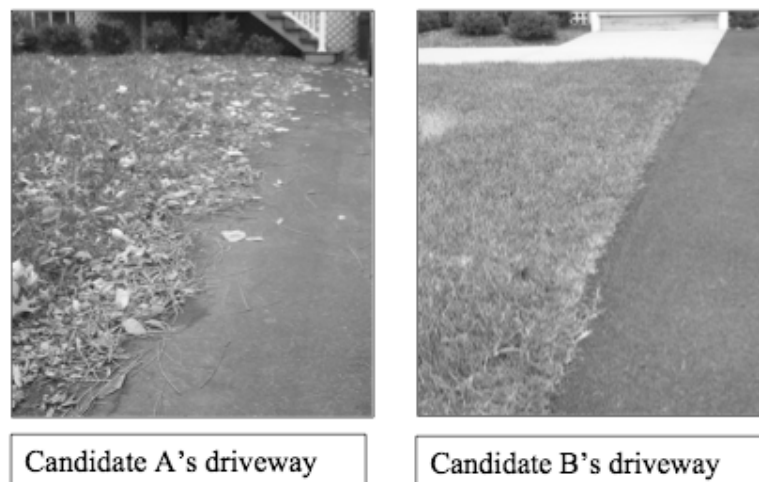
     A difference, if found, could be explained as categorization in its most classic form: the driveway is the driveway, the yard is the yard, and the line separating the two should not be blurred, or can comfortably be blurred. Do conservatives and liberals differ on this item? Yes, but it's not a very strong difference, and only fiscal

ideologues differ at significant levels in a one-tailed test. The correlations of table 6.9 tell the story.

Table 6.9. Point-biserial correlations between electing, for "your representative in the U.S. Congress" a candidate who keeps his driveway neatly edged versus messy, and dimensions of ideology, measured by issue positions.

Ideological dimension	Point-biserial correlation with congressional choice (0=messy driveway, 1=edged)	$p-value$, one-tailed
Moral ideology	0.11	0.075
Fiscal ideology	0.13*	0.040
Tough-tender ideology	0.07	0.18
Military ideology	0.12	0.055

N=177
* $p < 0.05$

We can gain a little insight into what's going on by asking which personality traits are related to preference for the edged driveway, and it's mainly the ones we'd expect—the ones that relate to decisiveness, Openness and Conscientiousness. Openness itself correlates negatively with choosing the driveway edger at r = -0.16, p = 0.03, Dominance positively at r = 0.13, p = 0.07, and conscientiousness at 0.14, p = 0.068, all reported ps two-tailed. Moreover, each of these three traits independently makes its own explanatory contribution to the choice of the driveway edger and the slob—in a logit regression (not shown) of the electoral choice on those three traits plus respondent sex, each is *more* significant than in the just-reported correlations.

In conclusion, then, the driveway choice is related to ideology—particularly of the fiscal dimension—and also related to the traits that we've already seen predict ideology.

Attempt at replication: In the second student sample, N = 30 subjects saw the same item. Again, for tough-tender and moral ideologues, the results were null, tiny and in the wrong direction, rs = -0.05 and -0.05, p = 0.77 and 0.75. Fiscal conservatives appeared, once again, to favor the driveway edger, r = 0.21, still nonsignificant, however.

Only one "psychological" variable was significantly related to preference for the neatly-edged driveway in student sample 2: categorization strength.

H7. Conservatives more than liberals prefer a candidate who is a strong leader over one who is a recognized innovator in education; who is "tough and resolute" over being "philosophical" and who "makes a decision and sticks to it" versus "revisiting" his opinions.

Almost nobody would disagree that strong leadership *and* recognition for innovation are both good qualities in a school board member. But do conservatives and liberals disagree about which is the more important?

This mini-election, along with the two others reported below, was included for the small subsample of student sample 2 who were cited above as used for replications.[2] And indeed, with a sample of only 28, Conservatism of all three dimensions is associated with a preference for strong leadership over innovation. The point-biserial correlations between preference for the strong leader and issue-position-based fiscal, tough-minded and moral conservatism are 0.39, 0.34 and 0.33, one-tailed $p < 0.05$ in each case.

In two other mini-elections, a "tough and resolute" politician ran against a "philosophical" one; and a politician who "sticks to decisions" ran against one who revisits his opinions. None of the correlations between these elections and ideology are significant, but two of the correlations are large enough to note in passing. First, tough-minded conservatives may prefer a tough and resolute politician over a philosophical one, r = 0.24. And in a mild surprise, moral *conservatives* from this sample may have preferred a politician who *revisits his opinions*, r = 0.27, $p = 0.15$. This last result is another clash with the developing argument that moral conservatism is driven largely by a desire for *leaders who are decisive and certain*. In this case, however, a leader whose opinions are held less categorically appears to be the preference of more morally conservative students in a very small subsample of N = 28. Probably little fuss should be made of this, but I report it so that we have a full accounting.

H8. In a completely different series of mock elections, a subset of participants were offered choices between two faces, which were essentially ovals with eyes, eyebrows. nose, and mouth. One of the faces was subtly "happier" and the other one was, not angry, but designed to be more "set."

The prediction here is that conservatives should more often elect the happy face, but read on, as an opposite prediction is also sensible.

Originally this experiment was designed to sustain the opposite prediction—conservatives would prefer the more "set" face because it communicates "decisiveness," which would imply a categorical outlook. Several sample "elections" between two faces are shown in figure 6.2. Faces are made different by one or more of four means: rotation of eyebrows, narrowing of eye openings, changing the upturn or downturn of the mouth, and in one case moving the pupils so that the eyes are not confrontationally staring straight at the respondent. It is reasonably clear, if subtle, that in each election, one of the two faces is more pleasant, or happier.

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[2] The items were intended to be used in the first student sample but due to a technical survey-design error the results were not valid and so are not reported.

Upon reflection, I now believe I was asking too much of these faces to communicate such a detail as cognitive style merely by eyebrow rotation and so forth. Instead, I believe the more compelling theory predicts that *any* human's tendency will be to choose pleasant-looking faces over angrier faces, whether for friends,

Figure 6.2. A sample of several face-versus-face elections.
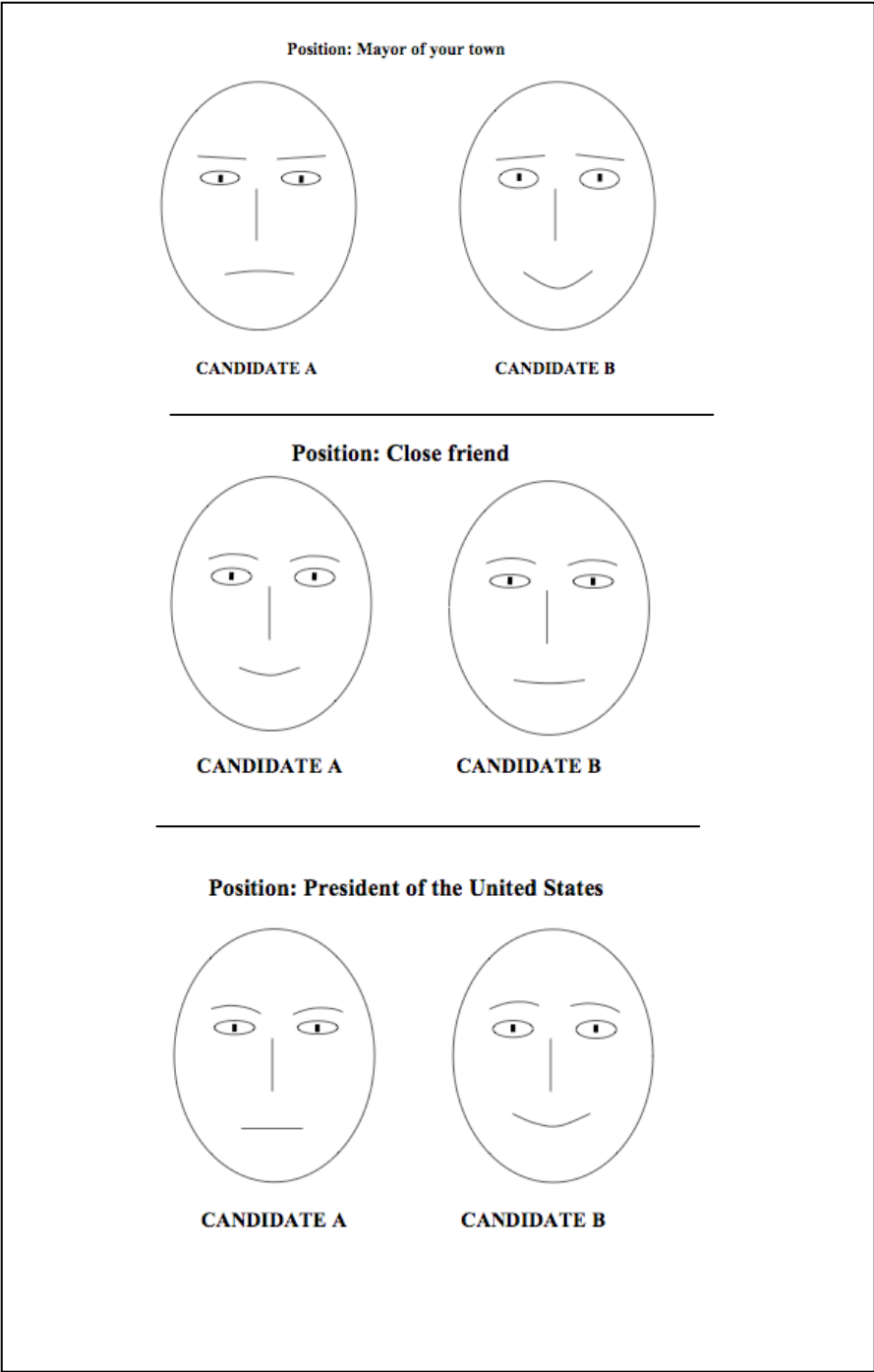
politicians, or whatever. However, those who less strongly categorize what constitutes a preferable face—those whose category of "good face" or "appealing person" does not stop with "happy" but extends to include less obvious possibilities, such as a more serious, thoughtful, or merely more difficult-to-read face—are more likely to "experiment" by occasionally venturing to choose the less obvious face.

Clearly, theory here is awfully undeveloped, but the results of this experiment are fascinating for whatever they're worth. A random 71 of the participants in student sample 1 performed the face-election task. Individually, only one particular face-versus-face election significantly differentiated liberals from conservatives. However, I later created a measure which was simply a count of the number of times a respondent selected the happy face for companionship or leadership. There were 10 face-versus-face elections for companionship or leadership in which one face was designed to look happier, resulting in a measure ranging from 0 (always voting for the "set" face) to 10 (always voting for the happier face). If conservatives and liberals differ in their propensity to select the happier face, perhaps this combined measure would reveal it.

It does seem to reveal something. The correlations of table 6.10 suggest that fiscal conservatives are probabilistically a good deal more likely to "jump at" the happier face. For other dimensions of ideology, the relationship runs in the right direction, and usually significantly.

These surprisingly strong relationships do not depend on any one item in an ideology scale, or on the single face election which by itself significantly differentiated fiscal liberals and conservatives. When that face election is removed from the "happy face preference" scale, all the significant correlations are still significant (fiscal ideology at a weaker $p = 0.0009$) except for military ideology, now $p = 0.06$. Moreover, the happy-face-preference measure is significantly and positively correlated with taking a conservative position on *every single issue in the fiscal ideology scale*, three of the five issues in the military ideology scale, and is signed in the correct direction to every single issue position contained in *any* ideological scale I'm using.

Neither is this result a product of, say, almost everyone scoring near 10 out of 10 in happy-face-selection except for a few nutty liberals who cynically choose the less happy face once or twice. The mean number of happy-face selections is 6.68 out of 10, but the distribution around this mean looks rather normal: about a quarter of the sample chose the happy face 6 times, and about a quarter chose it 7 times, with a steady monotonic decline as the number of happy faces chosen gets farther from the mean.

To borrow the language of Kruglanski and Webster, it seems possible conservatives are "seizing and freezing" on the happy face—it's the mechanically obvious choice, the choice central to the category "good faces," while the less happy

face, rather than being "set" or "decisive" actually represents what could appear to conservatives like an overthinking of the choice. However, none of my three measures of need for closure—noisy ones, but measures which have been helpful in analysis so far—is related to the happy-face preference, so my data do not support this notion. None of the Big-Five traits helps explain the difference either. Unfortunately, the subsample who performed the face election did *not* perform the categorization task, so I cannot report whether categorization predicts performance on this task.

Table 6.10. Correlations between tendency to elect a happier face and dimensions of ideology.

Ideological dimension	Pearson r	p – value, 2-tailed
Fiscal ideology, by issue positions	0.43	0.0002
Tough-tender ideology, by issue positions	0.28	0.018
Military ideology, by issue positions	0.28	0.018
Moral ideology, by issue positions	0.16	0.19
Additive combination of military and tough-tender ideology	0.35	0.002
N=71		

There is at least one clue in my data that does, after all, possibly support the "seize and freeze" notion. The persuadability index *does* predict the happy-face preference. People who were *more* persuadable (more open?) are, as one would predict, *less* likely to seize on the happy face, r = 0.23, p = 0.025 one-tailed. This result certainly seems to support the notion that a "seizing" psychology drives secular conservatism, as it seems beyond any realistic possibility that conservatives are pushed to choose happier faces by either conservative doctrine or an ideological commitment to being unpersuadable.

Let's revisit theory momentarily. In the political world, "seizing on the obvious" might translate into conservative ideology, and particularly fiscally conservative ideology, via the "transactionally mechanical" patterns of thinking I've discussed throughout this work: the economic world is composed of self-contained bilateral transactions enacted by self-interested parties. These transactions are the tightly connected moving parts of the economic machine, and are to be respected and not altered after the fact, as by taxation or redistribution. Any attempt to diffuse or spread around the benefits and costs constitutes "smearing" of the effects and interference with the machine's operation. But neither conservatives nor liberals need wax this philosophical to convert a seizing (or open-remaining) cognition into a more (or less) fiscally conservative outcome. One need only have a strong feeling that one's own efforts are tightly connected with the just rewards one receives, and that

this equation sums up and brings closure to the transaction—or, if liberal, have a vague feeling that effort and reward are often mismatched or even, at the radical position, uncorrelated. In other datasets, we will find that liberals do indeed (via values-related questions) perceive effort and reward as less related than conservatives do.

The point is that this latter, liberal, concept of effort and reward is less obvious and requires "overthinking." It's more effortless—and almost inarguable, from a certain perspective—to assume that "what a man is truly worth is what he is paid." QED.

H9. When two candidates support a similar policy change, and their difference is not recognizably part of liberal or conservative doctrine, but one of them wants a more "categorized" version of the policy, then the more "categorizing" candidate will have stronger appeal to conservatives.

This hypothesis requires some introduction. I wrote a summary of a fictitious election between two candidates for school board chairperson, with the purpose of having the two candidates endorse a new policy which was almost exactly the same for both candidates except that one candidate preferred a more "category-driven" version of the policy. The hypothesis, of course, is that conservative participants will then prefer the candidate based on his more categorized implementation of the new policy.

Trying to derive a policy difference that's of no substance save the amount of categorization is a tough challenge. My solution to it was this: the two candidates both supported allowing high school students to opt out of certain required courses so that they could have more discretion over their class choices. However, one of the candidates wanted to require students who did opt out of the normal requirements to declare a "major"—essentially categorizing their newly chosen course of study.

I have not, of course, thereby created two policies that are entirely identical except for the level of categorization. It's easy to point out real, substantive differences, over and above the level of categorization, between selecting courses in a "major" and selecting courses with no declared narrowing of the subject matter: for example, majors are surely likely to produce more single-source expertise, while non-major course selection is likely to allow for more cross-subject exploration.

But more to the point, I'm not aware of any tenets of doctrinaire liberalism or conservatism that argue that requiring major-declaration at the high school level is superior or inferior to allowing multiple subject exploration, especially when this is a detail of implementing a policy *change* from more to fewer required courses, a change presented in the vignette as being agreed upon by all.

I will simply outline the experiment and its result, for as with so many of these "tests," more is to be learned by observing exactly what subjects *did* than in simply noting whether a hypothesis was or was not confirmed at the 0.05 level. So…112 subjects in student sample 1 read the following essay:

Candidates C and D agree in principle on implementing a new program for high school students in the district. The program alters the classes that, in previous years, were considered "required classes"—for example, everyone had to take math, English, science and social studies every semester of every single year. But now, both candidates agree, students should be allowed to opt out of some of the old requirements and replace them with electives. But the candidates disagree on how that should be implemented.

Candidate C wants to require students to "major" in one of three areas—arts, sciences or languages/communications. Students who opt out of basic requirements must declare their major, and the courses they use to replace previous requirements must comport with this declared major. Students will be allowed to switch their major once.

Candidate D declines to endorse this major classification system. He says most students will probably "load up" on similar courses that interest them anyway— that is, science buffs will take more science, art buffs will take more art—but for those who simply want to explore, he thinks the classification system will make exploration more difficult.

Candidate C replies that it's OK for students to explore, and they can do almost as much exploration with the declared-major system in place. But he thinks classifying students according to declared majors will help students to get focused on their studies and their futures.

Candidate D replies that he thinks students will derive plenty of increased focus from their increased ability to explore subjects they enjoy.

The local newspaper liked both candidates, and liked the idea of adding electives. It did not endorse either candidate, but observed that this small difference between them nevertheless seems to fit the two candidates' styles.

They write: "Candidate C likes to be very specific: 'Calling a thing by its proper name, saying just what it is, gives you clarity, and students will succeed when they have clarity about their goals. That's what the major system is all about.'

Meanwhile, candidate D seems to prefer less specificity, saying, 'let things be what they are, let students be what they are, but don't try to force them into categories with an artificial major system.'

In the end, of course, both candidates endorse the more fundamental policy of letting students replace old requirements with new courses that interest them more, and both candidates are qualified to chair the school board."

Subjects then rated the two candidates, each on a scale of 1 to 10, and the difference between their ratings was calculated. This variable ended up ranging from -9 to 7, where higher values favor the pro-major candidate. Next, subjects were asked

"Which candidate do you think sees the world more like you do?" with responses entered on a 5-point scale, ranging from "the first candidate, strongly" to "the second candidate, strongly" and with a neutral midpoint. With responses ranging from 1 to 5, the mean answer to this question was 3.03, dividing the subject pool almost exactly in half. Finally, responses to these two questions were standardized and used to create an additive scale ($\alpha = 0.84$) measuring, in the positive direction, favorability toward the pro-major candidate over the pro-exploration candidate.

No dimension of ideology correlated significantly in zero-order correlations with preferring the major-endorsing candidate, although controlling in a regression for self-identified fiscal conservatism, sex, and party-identification, preferring the major-endorser nearly positively predicted fiscally conservative issue positions, $\beta = 0.13$, $p = 0.07$.

But amid the disappointment, there's a fascinating result. After stating their preferences, participants were asked whether they thought that the pro-major candidate was the more conservative candidate (and the pro-exploration the more liberal), the pro-exploration candidate the more conservative (and the pro-major the more liberal), or whether they could not tell. 13.3% were "wrong" and thought the explorer was more conservative; 35.7% didn't know; fully 51% correctly guessed which candidate I had designed to be more conservative.

I tested the alternative that people "tend to get it right"—correctly seeing that the pro-major candidate I created was in fact the more conservative—against the null that they couldn't see a difference in the candidates' ideologies. For each subject, I coded the "wrong" answer (thinking the pro-major candidate more liberal) 0; having no idea which candidate was more liberal as 1, and the "right" answer (pro-major is more conservative) as 2. This means that the null hypothesis is $\mu = 1$, or that the "mean" guess shows my subjects could not tell which candidate was the more liberal and which the more conservative. The mean of 1.375 differed (in the correct direction, obviously) from 1, $t = 5.575$, $p < 0.00001$. While preferences for one candidate over another were exceedingly weak (if slightly in the right direction), we can say with near-ironclad certainty that people appear to recognize, if asked, something conservative about the major-endorsing candidate.

Unless, that is, it's just that *everyone* thinks the categorizing politician is a member of the opposite ideology from themselves—liberals think he's conservative, and conservatives think he's liberal—and the oversampling of liberals results in the appearance that participants "correctly" guess his ideology. But this is not the case. Looking at the 37 conservatives alone who performed this item, their mean answer was 1.35—almost identical to the liberals—and also significant, $t = 2.99$, $p = 0.005$, two-tailed. People can discern, stunningly effectively I think, who's liberal and who's conservative just from the small policy difference of the essay.

Furthermore, it's very, very likely that had this question been asked *before* asking participants which candidate they preferred, the candidate-preference results would have been significant. In fact, this is almost certainly the case, as a preference for the pro-major candidate is correlated with issue-based fiscal conservatism, r =

0.30, $p = 0.008$ one-tailed, among those 61 participants who correctly guessed which candidate was "supposed" to be conservative.

H10. Conservatives and liberals define and understand elemental concepts of democratic politics, such as the concepts of property, freedom, and citizenship, differently.

I owe this lovely idea to professor Milton Lodge, who once suggested to me in the hallways of Stony Brook University that "liberals and conservatives have totally different things in mind when they talk about citizenship." This suggested to me a conduit through which cognitive style differences send people leftward or rightward. The idea is this: if an elemental political concept *means two very different things to two people*, they would certainly not be expected to produce identical opinions about how that concept relates to group living solutions, i.e., politics. Backing up, categorization strength, or perceptual-cognitive flexibility and rigidity, could quite conceivably have implications for how a concept is understood. Elemental group-living concepts like "citizenship," "property," "freedom" and others would mean something very specific, and absolute, perhaps, to strong categorizers, and something more vague, undefined, or conditional for weak categorizers.

I attempted to create measurement scales to measure the "amount of categorization" in participants' concepts of property, freedom, and citizenship. My attempts to measure "categorization in freedom" and "categorization in citizenship" did not result in reliable scales, and those efforts are ongoing in my research. I will discuss them momentarily, though, as the exercise was no waste of time.

I had better luck with property. The goal here was to measure the extent to which an individual sees owning "property" as meaning a thing is "categorically mine"—a notion that my control over the thing is more absolute and that the thing's being "mine" is a true aspect of the thing that inheres in the thing itself rather than just a conventional arrangement by which I have privileged access to it. The questions in the "property series" were administered in consecutive but random order to student sample 2.

Three of the items asked participants to "indicate whether the following statement 'feels like it's right' to you, or 'feels like its wrong,' and how strongly," with five response options. The three statements were

> ("Destroy") When a thing is my property, I have the moral and ethical right to destroy it so that it is gone forever.

> ("Share") When a thing is my property, that means I am under NO ethical obligation to share that thing with others.

> ("Alter") When a thing is my property, I have the ethical right to alter that thing permanently to another condition, even if other people in the community might wish that I would not do so.

Two more items asked participants to place themselves on a five-point scale between two labeled endpoints. The endpoints read,

("Property itself") Endpoint 1: The fact that PROPERTY BELONGS TO ME seems like a true characteristic of the PROPERTY ITSELF; Endpoint 5: The fact that PROPERTY BELONGS TO ME does NOT seem like a characteristic of the property itself, but only describes a SOCIETAL ARRANGEMENT between me and the property.

("Borrowing") Endpoint 1: Property is really just a very strong form of borrowing; after all, you can't take it with you when you die, so you end up having to give it back eventually anyway; Endpoint 5: Property is a COMPLETELY different thing than borrowing; even though everyone dies, you have the moral right to say what happens to it, so in a sense, you continue to own it even after death.

One final, longer item read as follows:

Imagine that you have bought and paid for a beautiful piece of artwork. You take this piece of art on a sailboat. The sailboat wrecks on an island unknown to the modern world, and you are stuck on this island for the rest of your life. You do manage, however, to save the artwork.

There are 100 native people who live on this island. They do not believe in such a thing as property, and do not recognize the possibility that anyone could "own" anything. They believe the artwork belongs to nobody, and insist that you display it publicly for all to see.

In order to get along with the islanders (and save your own life), you display the artwork publicly. However, IN REALITY, which of the following is true?

At this point the item offers two response options: "The artwork REALLY IS NO LONGER my property, because the islanders don't recognize property," and "Whatever the islanders might think, the artwork IS STILL my property—I've just been forced to share it."

71 subjects from student sample 2 saw each item, except for "property itself" which was administered to 31 subjects randomly. These six items were standardized and combined to form an additive scale of "absolute-property-conceptualization," $\alpha =$ 0.71, although it should be noted that the dichotomous measure based on the shipwreck vignette and the "share" item can be dropped to increase alpha to 0.76.

Do conservatives and liberals have different understandings of what it means to own a thing? Indeed they do, as shown in the correlations of table 6.11. In particular, tough-minded and fiscal conservatives have a more absolute understanding

of what it means to own a thing, while moral liberals and conservatives don't differ significantly.

Table 6.11. Correlations of ideology with "absolute" or categorical concepts of the meaning of *property,* student sample 2

Variable	Correlation with "absolute" concept of property	p – value (one-tailed)
Fiscal ideology, issue positions	0.30	0.005
Tough-tender ideology, issue positions	0.41	0.0002
Moral ideology, issue positions	0.07	0.26
N = 71		

Note: property measure includes shipwreck vignette; fiscal and tough-tender correlations increase slightly if this item is dropped from the measure

But couldn't this just be a learned result of having adopted an ideology? Couldn't it be that, once one identifies as fiscally conservative, one "learns" that property is very, very important and that any talk about property which seems to take a suspicious view of it is just thinly veiled socialism? The data suggest this is probably not the case. Tables 6.12 and 6.13 show the result of regressing issue-position-derived ideology, separately for tough-tender and fiscal ideology, on property absolutism and on self-identified fiscal ideology. In the first regression, property absolutism is a stronger determinant of tough-tender ideology than self-identified fiscal ideology, and in the second regression, although it's not as strong a determinant of issue-position-based fiscal ideology as self-identified fiscal ideology is, property absolutisms remains significant—and there is no question that the coefficient on self-identified ideology is biased upward by endogeneity, especially in this second regression. This all suggests that a model, in which understanding property (and other things) in absolute terms leads to conservative ideological thinking reflected *later* in self-identification, is more reflective of reality than one in which property absolutism is learned from other fellow ideologues.

It is perhaps even more telling to look at the most abstract and least ideological item in the scale—"property itself." Although it was only administered to 31 participants, its correlation with fiscal *and* tough-tender ideology is greater than 0.50, and, if substituted for property absolutism in the regressions of tables 6.12 and 6.13, this item alone reduces self-identified ideology to nonsignificance in both regressions. Being conservative in either the fiscal or the tough-tender dimensions appears to be more closely connected to *seeing ownership as an inherent characteristic of a thing rather than a social arrangement between an owner and a thing* than to *calling yourself conservative.* At least among these 31 subjects.

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Table 6.12. Tough-tender ideology, measured by issue positions, standardized. OLS coefficients, student sample 2.

Independent variable	Coefficient (standard error)	p - value
Property absolutism (standardized)	0.50 (0.16)	0.0005
Fiscal ideology, self-identified (0 to 1)	0.94 (0.43)	0.016
Participant sex (0=M, 1=F)	-0.09 (0.22)	0.679
Constant	-0.29 (0.22)	0.19

N = 69, R^2 = 0.27; p-values one-tailed for property and self-ID ideology

Note: tables 6.12 and 6.13 use the property absolutism measure without the shipwreck vignette.

Table 6.13. Fiscal ideology, measured by issue positions, standardized. OLS coefficients, student sample 2.

Independent variable	Coefficient (standard error)	p - value
Property absolutism (standardized)	0.29 (0.14)	0.02
Fiscal ideology, self-identified (0 to 1)	2.00 (0.40)	0.0000
Participant sex (0=M, 1=F)	-0.26 (0.20)	0.204
Constant	-0.29 (0.22)	0.19

N = 69, R^2 = 0.41; p-values one-tailed for property and self-ID ideology

Note: tables 6.12 and 6.13 use the property absolutism measure without the shipwreck vignette.

       Is the concept of property related to categorization or other psychological variables? Broadly, no, and this constitutes a disappointment. The overall property-absolutism measure is not significantly correlated with any psychological variable—trait, cognitive process, or categorization. However, the abstract item, "property itself," appears likely related to both categorization and deliberative complexity. Being more "absolutist" on this item is related to categorization strength (r = 0.26, p = 0.07 one-tailed) and deliberative complexity (r = -0.29, p = 0.051, one-tailed).

I wish now that this quite abstract item, which I only administered to a small subsample because I feared it was too abstract for participants to understand fully, had been administered to the entire sample. A basic reading of the item suggests it is the most "psychological" and least "ideological" measure of the way people conceptualize property.

Tallahassee sample: Indeed, so little confidence did I have in this "property itself" item that when I administered the property-definition series to approximately half (N= 51) of the Tallahassee sample I left it out of the scale. The other five items made for a very nearly conventionally reliable scale, $\alpha = 0.65$. Among the Florida adults, more absolute conceptualizations of property were extremely highly correlated with secular conservatism—r = 0.61 with fiscal, and r = 0.44 with tough-minded, $p < 0.001$ for each. The property absolutism-moral conservatism correlation of 0.28, $p = 0.025$ one-tailed, is entirely accounted for by moral conservatives' self-identified fiscal ideology (regression not shown).

Moreover, deliberative complexity is strongly related to property-concept absolutism, r = -0.35, $p = 0.011$. Sobel tests suggest that property-concept absolutism does act as a mediator between deliberative complexity and tough-tender ideology (38% of effect mediated, $p = 0.05$) and fiscal ideology (50% of effect mediated, $p = 0.01$).

In sum, then, it certainly appears that less flexible thinking is associated with a more absolute concept of *what property is*, and that this concept is associated with secular but, net of that, probably not moral ideology.

Freedom

A smaller student subsample (from sample 2) was randomly chosen to answer the "freedom" series, to gauge how "absolute" or "categorical" was their conceptual understanding of freedom. I attempted to create a scale of three items. The first item taps what might be called a negative versus a constructive concept of freedom. It reads,

> Some people say that a person who has no money, no house, and very little education can still be truly FREE if he/she lives in a place where the authorities never tell him what to say, what to do with his time, where to go, what religion to practice, and so on.
>
> Others say that such a person is not truly FREE, because although nobody tells him what to do, he/she lacks the tools, the knowledge and the resources to do the things in life he/she might actually want to do.
>
> What about you? In your opinion, is such a person fundamentally FREE, or fundamentally NOT FREE?

and offers four response options, from "fundamentally free" to "fundamentally not free."

The next item also tapped negativist versus constructivist concepts, and added a more explicitly communitarian idea. Participants were to endorse, on one end of a four-point scale, that "freedom means being left alone to pursue your goals without interference, even if that means having to do everything yourself" or, on the other end, that "freedom means having people around you who can help you pursue your goals, even if that means you have certain obligations to those people." The idea behind both questions, of course, is that a very limited or absolute view of freedom meant being, literally, unencumbered, but that there was a more expansive view of freedom, which means something more like "empowered."

A third item simply asked whether freedom was a simple concept, easy to understand, or a complicated concept, difficult to grasp, with the idea that if freedom is only the lack of encumbrance, then it's quite easy to understand, but that empowerment was a more sophisticated concept to construe as "freedom."

The items scaled together terribly. No two of them even correlated significantly (N=37). In retrospect, the items don't seem particularly well conceived as a scale, although in my defense I'll say that writing questions to try to measure the amount of absolutism or categorization inherent in someone's understanding of an abstract concept like freedom is a tall task indeed.

Nonetheless, the first item did yield some interesting results. A person who is unempowered by education, money, or other institutional supports but is at least left alone does appear to be thought freer by conservatives than by liberals (fiscal ideology $r = 0.32$, $p = 0.026$ and tough-tender ideology $r = 0.44$, $p = 0.003$, N = 37 and both significance tests one-tailed). However, this freedom concept was not related to categorization or any other psychological measure—not any trait, not deliberative complexity or attributionism. Nor was it related to any self-identification measure of ideology. It's very important to recognize something in this pattern of results, for no doubt there will be critics who argue that a negative view of freedom, as opposed to being entangled with "empowering" resource providers such as the government, is the essence of doctrinal fiscal conservatism. And yet it was ideological *thinking*, on the issues, and not self-identification (suggesting conscious subscription to a doctrine), which determined answers to the item. Moreover, it was not *fiscal* conservatism, of the issue-position dimensions, which most strongly predicted the negativist view of freedom; it was *tough-minded* conservatism. This pattern suggests that concepts of freedom are not driven by conservative and liberal economic doctrine; rather, the way people are thinking about concepts like freedom is probably causally prior to ideology—even though this particular item failed to correlate with any of my psychological measures.

The second freedom item was not significantly correlated with any measure of importance here, but the third freedom question, about the complexity of the freedom concept, was significantly related to categorization strength ($r = 0.35$, $p = 0.015$), and ambiguity intolerance ($r = 0.54$, $p = 0.0003$), and to a lesser extent to deliberative complexity ($r = 0.25$, $p = 0.07$), all in the right direction. It is also suggestively

related to tough-tender and moral ideology, again in the right direction (r = 0.22, *p* = 0.095; r = 0.24, *p* = 0.078, both one-tailed). So while the evidence is limited here by the small N of 37, it's plausible that a categorical or inflexible view of the world generally does lead to a simpler view of what freedom is, which might be related to ideological thinking.

Citizenship

Only 24 subjects were, by random selection, routed through the "citizenship" series. It was also designed to measure the amount of categorization or absolutism in the concept of citizenship, although it encompasses other elements too. Question one asked participants to indicate using four response options whether, on one end of the scale, "good citizenship"

> (1) generally means accepting and adopting the basic ways of life of the others in the community, thereby fitting in and enabling smooth dealings with others,

or, on the other end, whether good citizenship

> (4) could still mean adopting a very different way of life from those in the community and not fitting in as well, because this may benefit the community in certain ways too.

The competing definitions here are more blatantly ideological than I'd like. Writing such items, as I've said, is quite a challenge, and at least here which side is left and which is right is not necessarily clear. The first choice clearly indicates that good citizenship means behaving as others do, which might be considered by some a "socially" conservative position, although the other end, doing one's own thing, is plausibly libertarian.

The second question tapped whether "good citizenship"

> (1) necessarily means showing respect for the symbols, the heroes, and the history of the community, such as the flag and the national anthem, the founding documents, and the historical founders of a nation.

or whether it

> (4) has little or nothing to do with showing respect for symbols, historical events, or long-dead national heroes. You can be a great citizen without any of this.

This item too has strong currents of nationalist versus not-nationalist ideology in it. But it certainly must also be conceded that, with both items, the first choice paints a

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clear picture of good citizenship—*you must do precisely this*—while the opposite option leaves the possibilities for good citizenship wide open.

The third item attempted to scrub the question of substantive ideological content. Either, at one end of the scale,

(1) because there are an infinite number of ways to practice good citizenship, it is COMPLETELY IMPOSSIBLE to say what a "good citizen" looks or acts like

or, at the other end,

(2) although not all good citizens are exactly the same, there are enough basic characteristics of good citizenship to draw the general outlines of what a "good citizen" would look or act like.

The scaling of the three items was at least better than abysmal, $\alpha = 0.44$. In fact, no two items intercorrelated significantly, although this is mainly because the N was only 24. The 0.28 correlation of item 1 with item 2, and the -0.29 correlation of item 1 with item 3, is not outside the range of item intercorrelations in more reliable scales. The scale's weakness is due to the poor correlation of items 2 and 3, r = -0.05.

Probably not surprisingly, the scale, coded so that more "absolute" definitions of citizenship are coded higher, is correlated with ideology, as shown in table 6.14. What probably *would* surprise many political psychologists, however, is the particular pattern. For many the facile prediction would be that moral conservatism would be associated with nationalist pride or moralistic prescriptions to "do-like-your-neighbor-does." Well, probably moral conservatives do feel marginally more this way than liberals do—a larger N would likely have fetched significant *p* - values.

Table 6.14. Correlations of ideology with "absolute" or categorical concepts of the meaning of *citizenship*

Variable	Correlation with "absolute" concepts of citizenship	*p*-value (one-tailed)
Fiscal ideology, issue positions	0.66	0.0003
Tough-tender ideology, issue positions	0.816	0.0000
Moral ideology, issue positions	0.24	0.135
N = 24		

But if fiscal conservatism is libertarianism, it doesn't look like much like it with regard to concepts of good citizenship. Fiscal conservatives—those who want less government intervention, who want a private healthcare system, and so forth, strongly view good citizenship as *behaving like your neighbor* while also tending to

view it as involving respecting national symbols. Finally, they find it an easily understood concept that means a limited number of concrete behaviors. (I checked all three items separately.) Fiscal liberals view it in opposite ways (the means for the three questions were all between 2 and 3 with response options 1, 2, 3, and 4, indicating that the questions did a good job of splitting the sample).

We can't take the correlations of 0.8 and 0.66 at face value; they are actually a function of the poor scaling of the citizenship concept, and the fact that the citizenship items intercorrelated more poorly than each did separately with ideology measures. And yet the first two items, the ones "contaminated" with ideology, are slightly *less* correlated with tough-tender ideology than the third item, which merely taps the extent to which participants regard citizenship as easily understood and concrete. So it would appear that the *style of conceptualization* of the concept, not just the definition itself, is a large portion of what drives people toward liberalism or conservatism—and again, especially of the secular variety.

Concepts of citizenship are very convincingly, and usually very strongly, related among these 24 participants to psychological measures as shown in table 6.15. (Again, the correlations are inflated because psychological variables sometimes predict the various items better than the items predict each other, indicating that the construction of a "citizenship conceptualization" scale is still a work in progress.)

Table 6.15. Correlations of absolute concept to citizenship with psychological variables

Variable	Correlation with "absolute" concept of citizenship	p – value (one-tailed)
Experiential Openness	-0.39	0.03
Ambiguity Intolerance	0.47	0.01
Deliberative complexity	-0.57	0.002
Attributionism	0.45	0.052
Categorization strength (measure most strongly related to tough-tender ideology)	0.33	0.06
N = 24, except attributionism, N = 14		

24 is an awfully small N, but the evidence supports Lodge's idea: cognitive style does affect the way people understand citizenship, and the way citizenship is defined, as narrow or broad, affects the conclusions we draw about politics. To sum more generally, the idea that cognitive style affects politics by affecting the ways in which people understand and conceptualize the fundamental elements of political thought has not exactly been explored in great depth here—nor ever, to my

knowledge. However, as a potential conduit between cognitive flexibility-rigidity and left-right opinion formation these three preliminary investigations indicate such model holds promise.

H11. Where one candidate boils decisions down to their essence and decides them based on just one or two criteria, and another candidate tries to consider a wider range of criteria, conservatives more than liberals support the candidate who "boils it down."

Theory supporting this hypothesis has mainly been discussed—weak categorizers include more considerations in a "decision compartment,"—so lets get straight to the experimental results. In student dataset 1, about half of the subjects (N = 71) were presented with a mock election. The item read,

> An election for mayor is run. Here is a quick description of the two candidates' styles:
>
> Candidate A prefers to boil decisions down to the "essence of the issue." He says, "I realize that the world is complex, but with most decisions, you can usually boil them down to just one, or at most two essential factors. For example, when deciding whether to re-zone a city block for a new hotel, I ask myself one basic question: will it stimulate the downtown economy, or not? If so, then I'm for re-zoning. I realize that there are other effects, what people call 'indirect effects,' which any such decision has on the community, but you have to realize that you'll never be able to count up all the indirect effects. Some are good and some are bad, and they cancel out. You have to find the essence of the issue and base your decision on that.
>
> Candidate B prefers *not* to boil decisions down to their essence. He says, "You have to think hard about the multiple effects of a decision. Sometimes the later, indirect effects are larger and more important than the immediate ones. For example, when deciding whether to re-zone a city block for a new hotel, you can't just ask, 'will this stimulate the downtown economy?' You also have to ask yourself what overall effect a hotel will have on the civic life of people who *live* downtown. It might be a positive effect, and it might be a negative one, but you have to think about it. And then there are indirect effects outside of the downtown area. And also, what will this do to the overall image of our city? What if the hotel goes out of business? You have to think long and hard about many multiple impacts for every decision.

Note, most importantly, that no policy position is taken by either candidate. Both are willing to approve re-zoning. (Although it does seem that the first candidate is slightly more likely to do so.) The main difference is in how many considerations they allow to impinge on their decision. Note also that the issue, though local, is economic.

Half the subjects saw the candidates' order reversed, with candidate A as the "boiling down" candidate, to handle potential ordering effects. After subjects read the descriptions, they rated each candidate on a 1-to-10 scale, and the dependent variable became the difference in rating between the simple-thinking and the complex-thinking candidate. The prediction, of course, is that conservatives more than liberals will prefer the simple thinker who "boils decisions down." Do they?

For student sample 1, only moral conservatives do, and it's not a tremendously strong effect—but it's all the more interesting because the issue at hand is not even a moral one. Table 6.16 shows the regression, with sex as a covariate control. Controlling for sex, a 1-point increase in rating the simple thinker higher than the complex thinker predicts a 0.07-s.d. increase in moral conservatism (with the range of preferences for the simple over the complex mayor ranging from -9 to +7, μ = -1.5). The same regression yields nonsignificant (and not even close) coefficients for fiscal and tough-tender ideology.

Table 6.16. Moral ideology (issue positions, standardized) explained by preference for mayor A, who boils things down to their essence, over mayor B. Student samp. 1. OLS coefficients.

Independent variable	Ordered logit coefficient (standard error)	p - value
Preference for mayor A over mayor B	0.067 (0.037)	0.037
Participant sex	-0.16 (0.25)	0.529
N = 44		

Table 6.17. Moral ideology (issue positions, standardized) explained by dichotomous vote for mayor A, who boils things down to their essence, over mayor B. Student sample 2. OLS coefficients.

Independent variable	Ordered logit coefficient (standard error)	p – value
Vote for mayor A over B	0.84 (0.23)	0.0005
Participant sex	-0.41 (0.20)	0.049
Constant	-0.23 (0.14)	0.112
N = 66, R^2 = 0.19; significance test one-tailed for vote.		

The same vignette was repeated for student sample 2, with N = 68 students in the subsample assigned to the task. This time, the results are more interesting. The preference for the simple thinker over the complex thinker nearly predicts moral and tough-minded conservatism, with one point's difference in the rating associated with a 0.03-s.d. difference in both moral and tough-minded ideology and one-tailed p – values of 0.06 in each case. The preference for the simple thinker *significantly* predicts fiscal conservatism, $\beta = 0.044$ s.d. for a one-point rating difference, $p = 0.038$.

Table 6.18. Correlations of preferences for simple- over complex-thinking mayor with psychological variables

Psychological Variable	Correlation with relative preference for simple-thinking mayor (p – value)	Correlation with dichotomous vote for simple-thinking mayor (p – value)
Deliberative complexity	-0.26 (0.015)	-0.33 (0.003)
Attributionism	0.17 (0.15)	-0.06 (0.70)
Experiential Openness	-0.19 (0.06)	-0.05 (0.70)
Ambiguity Intolerance	0.25 (0.019)	0.11 (0.17)
Categorization strength (most general measure)	0.15 (0.11)	0.23 (0.03)
Categorization strength (measure most closely related to tough-tender ideology)	0.21 (0.04)	0.18 (0.07)

Note: N = 68, except attributionism, N = 37. All significance tests one-tailed except attributionism with dichotomous vote, because signed in unpredicted direction.

All these results are in the right direction, of course, and constitute a replication of a finding that conservatives (especially moral ones) prefer leaders who boil issues down to fewer considerations. However, after the ratings, subjects were asked to vote for one candidate or the other—a dichotomous measure. And here the results get even more interesting. The coarser either-or vote measure no longer approaches significance in predicting fiscal or tough-tender ideology. (This also occurred for student sample 1.) However, for moral ideology, the significance level strengthens considerably, as shown in table 6.17, such that voting for the mayor who considers one or two aspects to an issue is associated with more than a half-standard-deviation increase in moral conservatism.

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Here's another hint, then, of the emerging theory about moral conservatism—that moral conservatives, while not necessarily much stronger categorizers than liberals, nonetheless prefer this trait in their leaders.

Even more exciting, the preference for Mayor Boil-it-down is significantly associated with several psychological variables in the predicted direction, including deliberative complexity, ambiguity intolerance, and the most basic, categorization strength itself, as seen in table 6.18.

In sum, we have evidence, with a replication, that the psychological variables that are hypothesized to predict various dimensions of ideology also predict a preference for a candidate who boils issues down to their essence, and that this preference is itself connected to ideology—especially, in this case, moral ideology.

Hypotheses that completely, totally, utterly weren't supported

Yes, there were a couple of these among the "nominally political" asymmetries too. Here they are…

H12. Conservatives will show more "conservative social identity" than liberals will show "liberal social identity".

Social identity, a concept here drawn from Social Identity Theory (SIT; Tajfel 1981; Tajfel and Turner 1979) and Self-Categorization Theory (SCT; Turner, et al. 1987), is a sense of emotional attachment to a group which, according to theory, has implications for self-esteem. As long as the in-group is positively regarded and is not socially subordinate, a sense of in-group should enhance self-esteem, driving high levels of emotional attachment.

The original prediction was that conservatives, categorizing things more strongly generally, should naturally categorize themselves (as conservatives) more strongly than liberals categorize themselves (as liberals), and hence possess higher levels of ideological social identity.

Following SIT, however, this presumes that neither conservatives nor liberals are clearly a subordinate group in the target population. Such a balance should allow each group's members the potential to derive positive self-esteem from attachment to their group. It is possible that the predominance of self-identified liberalism in the Stony Brook population (ratios of 2-to-1, liberal-to-conservative, or higher, are common in student samples) generates a pervasive sense that conservatives are in fact subordinate, which according to Tajfel's theory might cause some conservatives to "move away," in emotional-attachment terms, from the identification as conservative.

This may in fact be the reason why we are confronted with a strong result in the opposite direction from expectation among the first sample of Stony Brook students. Four questions were drawn from Mael and Tetrick's (1992) 10-item "Identification with a Psychological Group" scale, which was used by Greene (1999)

to measure *partisan* social identity and includes items asking subjects to agree or disagree with statements such as "It makes me angry when people criticize liberals" or "When talking about conservatives, I use the word 'we' rather than 'they.'" The items were administered to gauge liberal and conservative social identity (they were randomized in order and interspersed with each other), and the resulting liberal and conservative social identity scales were recoded to range from 0 to 1.

A simple t-test reveals that those who identify as liberal have "higher" levels of liberal social identity—0.66 on the 0-to-1 scale—than those who identify as conservative do conservative identity—0.56 on the scale—t = 3.91, p = 0.0001, two-tailed, N = 154.

Nor is this the result of liberals being more "extreme" in their level of self-identification. That is, where ideological self-identification ranged from 1 to 7, with 1 indicating "very liberal" and 7 "very conservative," it *is* true that the liberal identifiers in student sample 1 tended to be significantly closer to 1 than the conservative identifiers were to 7 (t = -2.01, p = 0.046). But this relative liberal extremity does *not* account for the difference in social identity. Regressing the level of social identity one has for one's own ideological camp on a dichotomous variable denoting whether one identified as liberal or conservative, and on a folded self-identification scale indicating simply the amount of extremity (nearness to 1 or 7 on the self-identification scale) leaves the dichotomous liberal-or-conservative variable intact and strongly significant, as shown in table 6.19.

Table 6.19. Social identity as a function of identifying as either liberal or conservative. OLS coefficients

Dependent variable: strength of social identity with the ideological camp in which one places oneself—i.e.*,* for liberals, strength of liberal social identity; for conservatives, strength of conservative social identity. Self-identified independents dropped from analysis. Variable ranges from 0 (minimal social identity) to 1 (maximum social identity)

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Participant self-ID as liberal (0) or conservative (1)	-0.125 (0.037)	0.001
Strength of self-identification as liberal or conservative (0 to 1*)	0.37 (0.079)	0.000
Constant	0.35 (0.05)	0.000
N = 153; R2 = 0.21		

*Note: no participants in this regression score 0 on this variable, because that indicates a self-identified independent.

It is clear that liberals in Stony Brook student sample 1, contrary to expectations, feel more emotional attachment to being liberals than conservatives do to their own ideological camp. Would this fact hold in a different locale, such as Tallahassee, where conservatives are not a subordinate group? No. In results not shown here, as part of an unrelated study, I did gather social-identity data in a different Tallahassee sample, and controlling for self-identified ideological extremity, conservatives and liberals do not differ in the level of social identity they display for their own ideological group. So it remains likely that strong liberal social identity at Stony Brook is a function of liberals' being the dominant ideological camp there.

There is one additional possibility—a remote one, to my mind—that might explain the unexpected finding at Stony Brook, other than conservatives' status as a subordinate minority at a northeastern university. It is possible that, being weak categorizers, liberals naturally have a stronger sense of integration into groups generally. They "lose themselves" as individuals, and see themselves as naturally more synonymous with their group. This explanation seems intuitively implausible to me, and there are a few findings in this dissertation that militate against it, such as conservatives' stronger tendency to regard fans of opposing teams as less likable people than fans of their own favorite team. But I do not have a finding which directly contradicts this hypothesis, so further research is required if the "liberals-have-higher-social-identity" conundrum is to be either better understood or falsified.

I might have had evidence to support the hypothesis, however, had a separate test proven significant—but it didn't. Early in the survey administered to student sample 1, I attempted to create Tajfel-style "minimal groups"—groups to which participants knew they belonged, but for which there was no substantive basis for meaningful emotional attachment. I had students choose which, between two abstract paintings, they liked best. Later in the survey, I gauged, using the same four questions as with ideological identity, their level of social identity with people who chose the same painting as opposed to the other painting. The prediction was that conservatives would show higher levels of minimal-group social identity, for the reasons given above for ideological social identity.

The result was that *liberals* showed more minimal-group social identity, but not significantly ($p = 0.32$, two-tailed). I wondered if the reason liberals had higher levels of "painting group" social identity was simply that liberals care more about art, so that although for everyone the painting choice created a minimal-group membership, for liberals a more meaningful sense of membership was aroused. But this is almost certainly not the case: the Openness series contains the item "I believe in the importance of art," and liberals clearly believe in the importance of art more than conservatives do ($p = 0.000$)—indeed, this was the only Openness item to distinguish liberals from conservatives in student sample l. However, believing in the importance of art did *not* predict "picture-choice" social identity ($p = 0.411$ in bivariate analysis).

So based on this test, I have no evidence that liberals, conservatives, or even art-lovers, identify more strongly with an art-based minimal group, than anyone else does.

H13. At a political debate, given a choice between integrating liberals and conservatives in the audience versus separating them so that liberals sit on one side of the auditorium and conservatives sit on the other side, conservatives more than liberals will prefer separation.

This prediction is based on as pure a categorization effect as I could imagine. It's a political debate, and conservatives should think the sides should be as "categorized" as possible.

However, they don't. Student sample 1 was asked to indicate on a dichotomous forced-choice item whether they'd separate or integrate the two ideologies. Moral, fiscal and military ideology are orthogonal related to this preference (rs between -0.02 and +0.01), and but tough-minded conservatives, at near-significant levels, prefer integration more than tender-minded liberals do. Maybe the liberals are afraid! Or maybe one near-significant correlation out of four is an overall null finding. At any rate, in bivariate regression, wanting to separate the ideological groups is associated with being more liberal in the tough-tender dimension, $p = 0.072$ two-tailed.

Summary of asymmetries

We've been through a lot of hypothesized behavioral asymmetries. To make things easy, I've provided a table immediately following this chapter (table 6.20) summarizing all of them—whether they've been found to predict ideological dimensions in expected directions, how strongly, and whether they've been found to relate to categorization or other psychological variables as expected.

I invite the reader to peruse the table. I think the conclusion is overwhelming: liberals and conservatives are different sorts of creatures; the moral dimension of ideology is its own bird; and yet, it's rare for an asymmetry that bespeaks a preference for stronger categorization, more certainty, more decisiveness, more rigidity, etc. to predict liberalism of any kind. In the next chapter, we'll take a closer look at categorization itself.

Table 6.20. Summary of findings of nonideological asymmetries between liberals and conservatives

Key: *** very strong support ($p < 0.005$ in at least one dataset); ** strong support ($p < 0.01$ in at least one dataset); * basic conventional-significance support ($p < 0.05$); † finding generally in right direction but not significant at conventional levels; 3 replicated in a second dataset at conventional significance levels; white text on black background: finding in wrong direction.

Hypothesis	Support for tough-tender dimension	Support for fiscal dimension	Support for moral dimension	Test found related to cognitive flex/rigid variables generally?	Test found related to direct measure of cat. strength?
Traits/traitlike variables					
Conservatives lower in Experiential Openness than Liberals	*** 3	*** 3	** 3	yes	yes
Conservatives higher in Ambiguity Intolerance than Liberals	*** 3	*** 3	*** 3	yes	yes
Fully apolitical asymmetries					
Cons more than libs prefer hanging out with members of their own major	**	†	***	yes	
Cons more than libs say opposing sports teams' fans are less likable	**	**	†	yes but weak	
Cons perceive more inequality, between two men in picture where no inequality is implied, than libs	*	**	**	yes	yes
Cons perceive more hierarchy in picture where a presentation is given to a group, such that presenters outrank audience	***	†	***	yes	yes
Cons more than liberals will see competition or opposition rather than partnership or general fun-having in pictures of people playing games (tennis and tug-of-war)	†			yes	

Table 6.20, continued

Conservatives more likely than liberals to drive along the same route to work every day		**		yes	yes but weak
Cons view libs' opinions as relatively more "flat wrong," while libs view cons' opinions as merely reflective of different perspective	*	*	*	yes but weak	yes but weak
Conservatives self-report as *less* afraid than liberals (related to cat. theory because assertive or warrior-like dispositions should lead to decisiveness and hence cognitive categorization)	†	*		yes (with decisiveness measures)	
Cons less interested than libs in hearing an opposing point of view	*** 3	†	* 3	yes	
Conservatives are less generally persuadable than liberals	***	***	*	yes	yes
People who dominated others in middle school grow up to be more politically conservative	*		***		
When cons and libs shown two essays endorsing the same point of view (about keeping a clean house), cons prefer the less integratively complex essay.	*		*		
Cons more than libs "jump" on the happier of two faces when "electing" a face to various "offices"	*	***		only persuadability	
Ideological thinking related to type of romantic partner one prefers	Results only moderate strength, but generally support conservatives preferring more tough-minded, unyielding, and less philosophical or artsy partners				
Ideological thinking related to type of close friend one prefers: cons prefer more assertive, decisive friends who more strongly share their same beliefs than do liberals	*	*	*		
Cons more than liberals prefer to deal with disease-causing germs by keeping them out of the body rather than by improving their immune systems	**	*	***	yes	yes

Table 6.20, continued

Cons more than libs prefer learning environments where teacher is more separated from students	*				Yes
Conservatives more likely to have played varsity sports in high school	**	†	***	yes, but only closure's decisive component	
Conservatives more comfortable than liberals in heated confrontations	***	***		yes, but only persuadablty and closure's decisive component	
Cons more than libs, when a child is *being dominated* on the playground, hold the child who is being dominated responsible for ending the conflict	***	**		yes, but only dominance and closure's decisive component	
In free-association-type task, liberals free-associate "farther away" than conservatives, to objects that less resemble the original object	*	*			
In a word-association task, liberals will connect more words than conservatives			*		
Nominally political but non-ideological asymmetries					
When two candidates support similar policy change, but one's version contains more categories, conservatives prefer the more categorizing policy change	Null result on candidate preference, but subjects recognized the more category-friendly candidate as the more conservative one, $t = 5.575$, $p = 0.0000$				
Conservatives prefer an assertive over a kind-hearted leader, when those are the only descriptive words offered			**		

Table 6.20, continued

Cons more than libs prefer governor who sees animals and humans as fundamentally different rather than similar	† 3	** 3	*** 3	yes	
Cons more than libs prefer a politician who keeps his driveway neatly edged	†	* 3	†		yes
Cons prefer a politician described as "a strong leader," over one described as "an innovator"	*	*	*		
Cons understand the concept of property as a more absolute and categorical one than libs do	*** 3	*** 3		yes	
Cons understand the concepts of freedom and citizenship as more absolute and categorical than libs do	***	**		yes	yes
Conservatives more than liberals blame Britney Spears for her own problems	** 3	** 3		yes, but weak	
Conservatives higher than liberals in personal (not Feldman's economic) individualism	***	***		yes	
Given two candidates, one who decides issues on one or two essential considerations, another who uses a more complex decision strategy, cons more than liberals prefer the first	†	*	*** 3	yes	yes
Conservatives more likely than liberals to say cons and libs are different sorts of people fundamentally	***	***			
Cons more than libs believe a nerdy guy who has trouble getting girls can, by force of will, change his personality and hence his luck	***	†	**	yes	yes
Cons more than libs believe an overweight guy who isn't a great talker is to blame for failure to get job for which he's highly qualified		*	*		

Table 6.20, continued

Conservatives will show more "conservative social identity" than liberals do "liberal social identity"	Doesn't apply to separate dimensions, finding in opposite direction and significant, for New York students, but effect essentially zero in southern sample.				
Conservatives more than liberals prefer that libs and cons be seated separately from one another at a political debate	†				
Cognitive-process variables					
Liberals higher in deliberative complexity than conservatives	*** 3	*** 3	** 3	yes	yes
Conservatives higher in attributionism than liberals	*** 3	*** 3	†	yes	yes

Overall number of significant asymmetries in direction predicted by categorization theory: **89**
Overall number of significant asymmetries in opposite direction of that predicted by C-theory: **3**

Chapter 7

The categorization task

The basic purpose of this chapter is to test whether performance on my major categorization task does, in fact, predict ideological thinking. Some variant of the categorization task was administered to the first two student samples and to the adult sample. Because the categorization tasks *and* the issues used to measure ideology differed each time (with the content of categorization tasks differing substantially sample to sample), I present the results from each sample as a separate study.

The basic categorization task was described in detail in chapter 2. To remind, a participant encounters on the computer screen two boxes separated by a thick line (or, as shown in chapter 2, sometimes two circles intersecting in a football-shaped darkened area, or in where there are three categories, three circles mutually intersecting). Each box (or circle) represents a category, and is labeled as such. The participant is given a target item for classification, and is instructed to click the button inside the category where the target belongs or, if the target seems to belong "simultaneously to both categories" or lies "somewhere in-between categories," the participant can click on the button *inside the thick line separating the categories* (or in the football-shaped area where the circles intersect, or, when there are three circular categories, in the middle area where all three circles intersect—this is all illustrated in chapter 2).

Before proceeding, let me define a term. A *category-set* is the pair of categories used for a multi-item test. For example, "toys" and "not toys" represent a category-set, into which (or between which) a participant might be asked to place 10 target objects. A participant's categorization score is calculated for each category-set, and is derived from the number of between-category clicks for that particular category-set.

Analysis procedure

The procedure for each study will be roughly the same: after a short discussion of any new category-sets used to measure categorization in the sample, *i.e.,* categories not used in a previous sample, I will (1) determine whether a general factor measure of categorization strength can be extracted from subject performance *across* the various category-sets, or whether multiple dimensions of categorization performance emerge; (2) determine whether the dimensions of ideological thinking are related to categorization strength as measured by the category-set tasks; and (3) investigate these relationships further by asking which issues in the ideology dimensions are most closely related to categorization strength, and whether any trait-type variables might interfere with, or help explain, the relationship of categorization to ideology. In step 3, any negative relationship between categorization strength and Openness-type measures, or positive relationship with Extraversion-type measures,

will be considered to accord some criterion validity to the categorization measure, as theoretically it should generate more cognitive flexibility, and facilitate more assertiveness.

I will ask, for each separate sample, whether categorization strength has a closer relationship to ideological *thinking* (ideology measured by issue positions, that is) than to ideological self-identification. We wish to handle as best we can the challenge that people who are, say, conservative, learn *from doctrinal conservatism* how to "appear to think like a conservative." Conservative ideology does not, perhaps, contain literal *tenets* demanding the categorization of a broom as being or not being a home appliance, but some might argue that conservatism demands of conservatives that they *be decisive in all circumstances*, leading to strong categorization.

A finding that a tendency to place objects in categories predicts ideological *thinking* more strongly than ideological self-identification would go a good ways toward torpedoing this notion: while it's at least barely plausible that people decisively categorize everyday objects *because they know they're conservative*, it's far less plausible that they decisively categorize *because they're in favor of the death penalty*, or *because they consider income tax unfair.* If categorization strength predicts ideological thinking more strongly than ideological self-identification, then we are more clearly compelled to accept that categorization strength and rigidity/flexibility generally are causally prior to ideology.

Combined sample

But let us begin with a quick overview. Although there are differences in the categorization tasks across samples (discussed below), I created a combined sample of all participants who performed categorization tasks from student samples 1 and 2 and the Tallahassee adults, for a total N of 359. I utilized, for each sample, the most general measure of categorization strength available, which in each case included the maximum number of different category-sets. This measure was *not* always the strongest predictor of ideology for that sample, but for this global analysis I wanted to use the most general measure. I standardized these. Then, I combined the nativist and military ideology from student sample 1 into a single tough-tender-dimension, and standardized all ideology measures so that all three datasets could be combined to have three issue-position-based ideology-dimension measures with mean 0 and standard deviation 1. I also standardized self-identified ideology measures for comparison of effects. I kept a single demographic variable—participant sex—as a covariate. I begin by asking, for the separate dimensions, whether in the overall combined sample categorization strength predicts conservatism.

The regressions of table 7.1 indicate that it does. Controlling for sex, stronger categorization predicts more conservatism significantly in every dimension of ideology, whether measured by issues or self-identification. The strongest relationship is between categorization and issue-position-based tough-tender ideology, where, controlling for sex, a standard deviation increase in categorization

predicts a 0.18-standard-deviation increase in tough-minded conservatism, $p =$ 0.0005. The weakest relationship is between categorization and issue-position-based *moral* ideology, $\beta = 0.10$, $p = 0.034$.

      The coefficients aren't huge, and yes, the R-squareds are small. But let us pause here for a moment to consider just how remarkably abstract (and assuredly noisy) a measure of cognitive performance we see predicting ideological thinking virtually beyond doubt. We are not asking someone whether, in their opinion, art is important (Openness), or whether there's a right and wrong way to do things (Ambiguity Intolerance), or whether one is an assertive person or sees herself as decisive. We are asking whether a circle and a triangle are spatially oriented in one of two ways…or in-between. We are asking whether Frosted Flakes strike one as healthy or unhealthy…or in-between. In terms of level-of-abstractness or lack of ideological content relative to overtly political thought, this task easily bests any motivational "need-for" variable. These results are simply much better evidence for a real cognitive-process precursor to ideological thought than we've had heretofore.

      Nor are the significant correlations generally facilitated by the control for sex (though they were enhanced somewhat). Zero-order correlations between categorization and ideology are significant in two-tailed tests for all three issue-based dimensions (all ps < 0.035), and for general and "social" self-identified ideology (both ps < 0.03).

      Moreover, categorization predicts secular issue-based ideology when controlling for self-placed ideology. Predicting issue-position-based fiscal ideology while controlling for sex *and* self-placed fiscal ideology, the coefficient for categorization strength, although dipping to 0.095, remains significant, $p = 0.018$. Predicting issue-position-based tough-tender ideology while controlling for *general* self-placed ideology drops the coefficient for categorization strength to 0.101, but still significant at $p = 0.018$.

      Meanwhile, categorization predicts *self-placed* social ideology better than it does issue-driven moral ideology. When the dependent variable is issue-driven moral ideology and we control for self-placed social ideology, the coefficient for categorization strength is 0.0000. It appears again that this measure of cognitive rigidity, categorization strength, does not *push* people to take more morally conservative positions—but rather seems related to moral conservatism in a more roundabout manner which includes self-placement, leadership-style preferences, and probably some learning or adoption of issue positions.

Student Sample 1

I turn now to a closer look at individual samples. As sample 1 was designed primarily to unearth the "behavioral asymmetries" of chapter 5, only about half (N=86) of the participants were selected for the categorization tasks, and these subjects completed tasks based on only three category-sets. The sets used were: "home appliances / not home appliances"; "healthy foods / unhealthy foods"; and "above-below / not above-

Table 7.1. Combined-sample regressions of ideology on categorization

Independent variable	Coefficient	(std. err.)	p – value (one-tailed for categorization only)
Dependent variable: tough-tender ideology, issue positions			
Categorization strength, standardized	0.18	0.05	0.0005
Participant sex (0 = M, 1 = F)	-0.17	0.10	0.09
Constant	0.09	0.07	0.205
$R^2 = 0.035$			
Dependent variable: fiscal ideology, issue positions			
Categorization strength, standardized	0.15	0.05	0.003
Participant sex (0 = M, 1 = F)	-0.31	0.10	0.003
Constant	0.15	0.07	0.03
$R^2 = 0.041$			
Dependent variable: moral ideology, issue positions			
Categorization strength, standardized	0.097	0.05	0.038
Participant sex (0 = M, 1 = F)	-0.03	0.10	0.777
Constant	0.01	0.07	0.857
$R^2 = 0.01$			
Dependent variable: fiscal liberalism-conservatism, self-identification			
Categorization strength, standardized	0.106	0.055	0.027
Participant sex (0 = M, 1 = F)	-0.38	0.11	0.001
Constant	0.20	0.07	0.007
$R^2 = 0.04$			
Dependent variable: "social" liberalism-conservatism, self-identification			
Categorization strength, standardized	0.136	0.054	0.006
Participant sex (0 = M, 1 = F)	-0.22	0.11	0.041
Constant	0.09	0.07	0.201
$R^2 = 0.026$			
Dependent variable: general liberalism-conservatism, self-identification			
Categorization strength, standardized	0.16	0.054	0.0015
Participant sex (0 = M, 1 = F)	-0.36	0.11	0.001
Constant	0.16	0.07	0.028
$R^2 = 0.05$			

below." For the first category-set, subjects were shown physical objects as targets; for the second, foods; and for the third, subjects saw a series of depictions of two objects (two- or three-dimensional shapes, or letters) and were to determine whether the objects were oriented such that one was above the other, and the other below the one

(*i.e.,* in an "above-below" relationship), or not. Of course, for each category-set, subjects always had the opportunity to indicate, by "clicking on the line" separating the categories, that the object belonged simultaneously to both or somewhere in-between. Each category set contained 21 items for categorization.

One suboptimal outcome of the categorization tasks is that, for each of the three category-sets, the modal number of times a subject declined to categorize the offered object by clicking on the separating line is zero. Fully 70% of the subjects responding to the "above-below" category-set chose a category ("above-below" or "not above below") for every single two-object depiction. 61% chose a category for every last item in the food category-set, and 45% did so for home appliances. This means there is probably a kind of ceiling effect: if zero presses of the "middle button" is the maximum possible measure of categorization strength, then the "above-below" task cannot distinguish a moderately *weak* categorizer—someone relative to whom 70% of the sample categorizes more strongly (that is, someone who never clicks on the line, but very nearly does so exactly once)—from someone who categorizes at "infinite" strength (and hence would never even approach clicking on the line no matter what). This ceiling effect will tend to suppress correlations between categorization and ideology.

As discussed in chapter 2, scores on each category-set were truncated so that 5 non-categorizations was the maximum score available: scores ranged from 0 (no clicking on the line, or every object categorized) to a maximum of 5 (*5 or more* clicks on the line).

Step 1 results. Did the scores on the three category sets intercorrelate, indicating that the three tasks were measuring some kind of general tendency not to categorize? Yes, they did. Table 7.2 shows the intercorrelations. Crohnbach's alpha for an additive scale of the three category-set tasks, in which the three categorization scores are left unstandardized before they enter the scale, is 0.60—not quite up to conventional standards of reliability, but not outside the range of scores used in research. The tendency to categorize items, or to click on the middle button, is common across the different category-sets. However, it's possible that what's common is not really a tendency to "see things in categorical terms" but a trivial tendency to click in boxes rather than on lines, or to click on extreme rather than middle buttons. In other words, perhaps the subjects are reacting only to the peculiarities of the task rather than to the substantive content of the items. I can't positively rule this out, but the intuitively sensible differences between the correlations—the two "object categorization" tasks are more closely related than either is to the "spatial relationship categorization" task, and the differential abilities of the separate category-sets to predict ideological dimensions (explained momentarily) do suggest that we are measuring subjects' real perceptions of items as belonging to categories or occupying a middle ground between them.

Table 7.2. Pearson correlations of categorization-strength measures from three category-sets

	Home appliances / not home appliances	Healthy / not healthy foods	Above-below / Not above-below
Categorization of objects as home appliances / not home appliances	1.000		
Categorization of foods as healthy / not healthy	0.41 (0.0001)	1.000	
Categorization of object pairs as in "above-below" / "not above-below" relationship	0.22 (0.046)	0.35 (0.001)	1.000

N = 82; p – values in parentheses

Step 2 results. Does the general measure of categorization strength correlate with measures of ideology? Not terribly strongly, but there appears to be a relationship, as shown in the top row of table 7.3. Significance tests are one-tailed and at conventional levels indicate significant relationships between moral and military conservatism and the tendency to categorize items by clicking in one of the boxes rather than on the line in the middle. Fiscal ideology is related more weakly to this tendency, but approaches conventional levels of significance. Every measure of ideology is positively correlated with the general tendency to categorize, including self-identification measures. However, the self-identification measures are more weakly related, suggesting that categorization and its consequent cognitive style mainly affect people's *thinking about the issues*.

Interestingly, there is a suggestion of a sex difference in the tendency to categorize: men are slightly more likely than women to *decline* to categorize, or to press the middle button.[1] Including participant sex in simple trivariate regressions as a control variable predictably improves the performance of the general categorization measure in predicting ideology. I will not bother with a table in detailing these results,

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[1] Armchair theorizing on the author's part suggests that this is perhaps because women are more socialized to "follow rules" and, since the task is ostensibly to categorize objects, might feel that pressing the middle button constitutes underperformance on the task, or a failure to fully consider how an object might fit into one of the categories.

Table 7.3. Correlations of ideological dimensions with categorization-set measures

Ideolog. dimen. / Cat. measure	Fiscal by issue positions	Moral by issue positions	Military by issue positions	Tough-tender by issue positions	Fiscal by self-ID	"Social" by self-ID	General ideology, self-ID
General categorization (combined measure)	**0.15 (0.09)**	**0.19* (0.038)**	**0.19* (0.039)**	0.002 (0.5)	0.033 (0.27)	0.12 (0.15)	0.09 (0.21)
Cat. of home appliances / not home appliances	0.05 (0.34)	**0.25* (0.012)**	0.07 (0.27)	-0.07 (0.52)	0.03 (0.40)	0.14 (0.11)	0.06 (0.31)
Cat. of object-relationshps as "above-below" / "not above-below"	**0.24* (0.014)**	0.006 (0.48)	**0.27* (0.007)**	0.005 (0.48)	0.03 (0.37)	0.03 (0.36)	0.11 (0.16)
Cat. of food as healthy / not healthy	0.07 (0.27)	**0.16 (0.07)**	0.12 (0.13)	0.05 (0.33)	0.10 (0.17)	0.08 (0.24)	0.02 (0.43)
$N = 82$; p – values one-tailed except for home appliance / tough-tender correlation, two-tailed because signed in wrong direction; boldface indicates $p < 0.1$, * $p < 0.05$							

but controlling for sex, general categorization predicts fiscal ideology, $p = 0.05$ one-tailed, and moral ideology, $p = 0.02$.

In the second row of table 7.3, we begin to see that the categorization sets seem to function differently with different dimensions of ideology. Categorizing objects as home- appliances or not-home-appliances is significantly associated with moral ideology, but only nonsignificantly with other dimensions. Its relationship with self-identified "social" ideology approaches significance, but again it's the issue positions which are more closely related to categorization. In the third row, we see that what the "home appliances" category-set did for moral ideology, the "above-below" task does for fiscal and military ideology—further evidence that feelings about the death penalty and military strength are *less* properly conceived as "social-moral" issues than as secular issues. The appearance here is that these issues—along with foreign policy aggression and feelings about the Iraq war and favoritism toward Israel (which could suggest a tendency to choose sides strongly), are part of the same cognitive phenomenon that also produces *fiscal* ideology.

Again with the "above-below" category-set, it's the issue positions which are related to categorization, not self-identification. In fact, self-identification as fiscally liberal or conservative is essentially unrelated in this sample to the "above-below"

set. The healthy/unhealthy categorization-set behaved more like the home-appliance set, but somewhat more weakly.

Step 3 results. How did the categorization tasks relate to specific issues? Specifically, did categorization predict ideological dimensions by predicting some issues and failing to predict others? I begin with fiscal ideology; table 7.4 summarizes the intercorrelations of the analysis that follows. First, the "above-below" set was approximately equally related to the questions about favoring a public or private health plan, whether government is doing enough to help the poor, and whether government should intervene in the economy, rs = 0.23, 0.18 and 0.22 respectively. Correlations were lower and nonsignificant for favoring more or less regulation on business to help the environment, believing in global warming, and favoring or opposing taxation of the rich to benefit the poor.

I expected that issues in which an outgroup (categorically "different from us") was salient would show a pattern of stronger relationships with categorization strength, but that is not the case. The highest correlation is between categorization and a participant's stance on public versus private health care. How else might categorization affect fiscal issues? To investigate *how* categorization might affect the issues it affects, I regressed individual issue attitudes on categorization and a variety of traits. Where a trait interferes with (appears to mediate) the effect of categorization, I would regard that as a clue as to how categorization might affect the issue attitude.

There were no hints of mediation except regarding the public/private health issue, where trait Agreeableness appeared possibly to mediate the effect of categorization, but Sobel-Goodman tests found no convincing evidence of mediation anywhere.[2] Curiously, FFM Openness is significantly and negatively related to C-strength (r = -0.22, p = 0.019 one-tailed), but doesn't generally predict attitudes.

Then there is my own persuadability measure, clearly the best predictor of fiscal attitudes of all the variables, predicting liberalism strongly and generally. But rather than mediating the effect of categorization, it simply adds explanatory power to predictions of, say, health care attitudes while leaving the coefficient for categorization strength essentially unchanged, as in the ordered logit in table 7.5. Persuadability fails to mediate in table 7.5 because it isn't related to the "above-below" categorization task. Shouldn't persuadability be related to categorization strength? Well, it *is*, but to the wrong task: it's strongly predicted by the tendency to categorize foods as healthy or unhealthy. Note in table 7.5 that even when controlling for self-identified social ideology and for persuadability, both of which are related in the expected direction to opinion on health care, categorization remains significant in the analysis.

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[2] Very strictly speaking, a Sobel test is improper here because it requires OLS regression and the dependent variable is not continuous. I hope the reader will not regard this result as meaningless, however.

Table 7.4. Summary of intercorrelations involved in investigating categorization-fiscal ideology relationship

	Cat, above	Cat, applnces	Cat, food	FFM Open	FFM Agree	Dom-inance	Persuad-ability
Cat$_{above-below}$	1						
Cat$_{home-app}$	0.22*	1					
Cat$_{food}$	0.35***	0.41***	1				
Trait Openness	-0.24*	-0.12	-0.14†	1			
Agreeableness	-0.22*	-0.07	-0.11	0.35***	1		
Trait dominance	0.03	0.01	0.15†	0.28***	0.03	1	
Persuadability	-0.00	-0.09	-0.30**	0.24**	0.20**	-0.25***	1
All fiscal issues below this line; coded so conservatism = higher scores							
Public/private health	0.23*	0.10	0.11	0.01	-0.18**	0.12†	-0.22**
Gov't helping poor	0.18†	-0.02	0.02	-0.01	-0.16*	0.19**	-0.15*
Gov't intervening in economy	0.21*	-0.01	-0.09	0.09	0.10	0.13*	-0.09
Tax rich, redistribute to poor	0.05	-0.01	0.14†	0.09	-0.19**	0.17*	-0.23***
Regulate business for enviro.	0.14†	0.03	0.08	-0.12*	-0.15*	0.29***	-0.28***
Global warming	0.03	0.06	0.11	-0.02	-0.09	0.17*	-0.26***

All significance tests one-tailed. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Gray cells indicate r in unexpected direction.

This leaves us to ask why the above-below task, which predicts secular ideology well, is unrelated to any Openness measures here (including Need for Closure, not shown). The question is raised whether the "above-below" items are a valid measure of categorization strength on criterion validity grounds. I will leave this a mystery for student sample 1: not every finding lines up with every other in research such as this. I will rely on the remaining datasets to reassure us that the above-below category-set is a valid measure of categorization strength.

Table 7.5. Categorization predicts opinion on public-versus-private healthcare even in the presence of various controls. Ordered logit.

Dependent variable: public-versus-private healthcare system (conservatism higher)

Independent var.	Ordered logit coefficient (std. err.)	z	p – value (one-tailed)
Categorization strength on "above-below" task	0.39 (0.18)	2.17	0.015
Agreeableness	-0.33 (0.33)	0.33	0.16
Persuadability	-1.14 (0.43)	-2.67	0.004
Self-identified social ideology	2.47 (0.81)	3.04	0.001
Respondent sex	-0.59 (0.43)	-1.35	0.178

N= 82, pseudo-R^2 = 0.12; sign. test for sex two-tailed. Note dependent variable's five responses were left coded from 1 to 5, with 5 more conservative (more favorability to private health care).

While the reader is encouraged to stare at table 7.4 and look for his own patterns, my general impression is this: the above-below task seems somehow more related to philosophical concerns: it may verge on measuring a category-driven deliberative style rather than a mere tendency to place objects in bins, which helps explain its unique relationship here to *fiscal* ideology. Meanwhile, I don't see that categorization strength shows any systematic tendency to predict one subclass of fiscal issues better than another: my expectation that it would predict best when an out-group is named was not supported. The traits-based analysis did little to shed light on cognitive pathways connecting categorization to fiscal ideology, although the persuadability results, and the powerful relationship of persuadability with one categorization task suggests one possibility: if conservative positions are the more "obvious," or require less deliberation to support (less "overthinking," conservatives might say), persuadability might be a decent measure of a person's willingness to "think about an issue for long enough to become liberal." Perceiving certain things (foods, here) as difficult to place in certain categories seems to be an elemental component of this tendency to "reconsider until liberal."

Step-3 analysis continues with moral issues. All relevant intercorrelations are shown in table 7.6. The general categorization measure is correlated in the right direction with all the issues in the scale—favorability toward "alternative"

Table 7.6. Summary of intercorrelations involved in investigating categorization-moral ideology relationship

	Cat, general	Cat, above	Cat, applnces	Cat, food	FFM Open
Cat$_{general}$	1				
Cat$_{above-below}$	0.64***	1			
Cat$_{home-app}$	0.77***	0.22*	1		
Cat$_{food}$	0.81***	0.35***	0.41***	1	
Openness	-0.22*	-0.24*	-0.12	-0.14†	1
All moral issues below this line; coded so conservatism = higher scores					
Gay marriage	0.21*	0.04	0.22*	0.20*	-0.12†
Abortion	0.16†	-0.10	0.24*	0.16†	-0.03
Alternative lifestyles	0.13	0.02	0.19*	0.06	0.01
Decalogue	0.10	0.05	0.11	0.07	-0.05
Assisted suicide	0.23*	0.22*	0.25*	0.08	-0.02

All significance tests one-tailed. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Gray cells indicate r in unexpected direction.

lifestyles (r=0.13); abortion attitudes (r=0.16); gay marriage (r=0.21); posting the Ten Commandments in government buildings (r=0.10)—and, curiously and most strongly of all, with a moral issue question which was not included in the moral ideology scale due to its failure to scale adequately with the other items—favorability toward physician-assisted suicide ($r = 0.23$). In fact, in a two-tailed test, *only* the correlation between general categorization strength and physician-assisted suicide is significant at conventional levels ($p = 0.03$), with the categorization-gay marriage question just missing conventional levels ($p = 0.051$).

An interesting curiosity: the abortion question is nonsignificantly related to the "above-below" task in the *wrong* direction, r = -0.10, $p = 0.37$, which explains the failure of general categorization strength to significantly predict this, the probable definitive issue of moral ideology. The "home appliance" category set was correlated with conservatism on the abortion question at r = 0.24, $p = 0.014$ one-tailed, a more satisfying result. This is further evidence that the above-below category set functioned differently than the other two category-sets.

Of the individual issues, I mainly delved further into the gay marriage question since it showed the strongest relationship with categorization. But no traits—Openness, persuadability, Agreeableness, Conscientiousness, Extraversion—

interfered with categorization's ability to predict gay-marriage attitudes or moral conservatism generally in Sobel tests. Categorization$_{general}$ also survived a control (itself significant) for Need for Closure (the "preference for simplicity" dimension), with no apparent mediation. No trait interfered with the relationship between categorization and assisted-suicide attitudes either.

Overall, it does appear from student sample 1 that strong categorization is related to moral conservatism. But I want to direct attention to the item that "failed" to scale adequately with the other items in the moral ideology scale—attitudes about physician- assisted suicide (PAS). I should say: the inclusion of PAS in the moral ideology scale does not exactly destroy its validity: it merely lowers α from 0.79 to 0.78. Its correlation with the rest of the moral ideology scale, while falling short of the other items' "item-rest of scale" correlations, is nonetheless a robust 0.39 ($p = 0.0000$), and it's well correlated with self-identified social ideology too, r = 0.31, $p = 0.0000$. Nonetheless, it stands out as the one moral issue which seems detached from the others—probably because, due to its lower societal salience, participants either have not considered it before or, if they have, they have not seen it as doctrinally "packaged" with the other, more commonly-heard-of moral issues.

So perhaps participants are freer, when considering their answers to the PAS question, to simply think for themselves, rather than to fall back on what their religion or ideological conceptions "teach" them. This at least potentially explains why, despite its being the "odd man out" among moral issues, it's more closely related to categorization than any other moral issue. Even more striking is that stronger "above-below" categorization, which was not correlated with moral conservatism as a scale, *does* significantly predict opposition to physician-assisted suicide.

Other dimensions

It remains to examine the relationship between categorization and individual "military ideology" issues in sample 1. Curiously, although nearly all correlations are in the right direction, none of the individual issues in the military-ideology scale—attitudes on military strength, favorability toward unilateral foreign policy, belief that Israel is in the right vis-à-vis the Palestinians, favorability of the Iraq war, and death-penalty attitudes—is significantly related to the general categorization measure or to any single categorization task, except for one: strong categorizing in the "above-below" task is correlated with favoring Israel over the Palestinians at 0.30, $p = 0.004$ one-tailed. If we can spot a pattern, perhaps categorization seems to predict the explicit foreign policy attitudes more strongly than favorability toward militarism itself or for the death penalty: that is, Iraq war, favoring Israel, unilateralism.

Attempts to find mediation through trait measures between categorization and opinion on military and foreign policy issues generally found nothing, with one exception. In the context of regressing unilateralism attitudes on above-below categorization, Experiential Openness, and participant sex, a Sobel test reveals probable mediation of the effect of categorization on unilateralism via Openness—

Sobel coefficient = -0.05, *p* = 0.074 (N=82), with 47% of the effect mediated.[3] The proxy measure of Openness which I have been using frequently, persuadability, mediates none of the effect of above-below categorization (as we've seen, above-below categorization is unrelated to persuadability). In this mediational performance I strongly suspect that Openness is simply acting as a proxy measure of Universalist values (read the Openness questions and the Schwartz value items—it's pretty obvious they're measuring something similar), of which multilateralism is a specific instance. This is a rather uninteresting result.

As tough-tender ideology was unrelated to any categorization measure, I will not explore it in any detail here. I move to an analysis of student sample 2 with a few conclusions in hand: it does appear that strong categorization is related to ideological conservatism in moral, fiscal, and military dimensions, although different categorization tasks seemed to operate on different dimensions. While it was tantalizing to see a congruence between the abstractness of the above-below set and the abstractness of fiscal ideology, this pattern will not always hold—categorization will predict ideology more generally elsewhere. Here, the more abstract "above-below" task was related to most of the fiscal-ideology questions. The more concrete categorization tasks were related to all the moral-ideology questions, and to PAS, which was related to the above-below task as well. Beyond that, however, it was difficult to pick out patterns suggestive of which issue positions are and which are not influenced by categorical thinking. Correlations between individual issues and individual category-sets were overwhelmingly in the right direction, even where not statistically significant. A categorization-strength-opinion-formation relationship then is strongly in evidence, although some room for doubt remains. We can remove a bit more doubt, then, as we examine student sample 2.

Finally, a short relationship-with-traits roundup: categorization strength has been seen in student sample 1 as related negatively to Openness and Agreeableness—both in line with expectations (Agreeableness being a weak expectation). What about Extraversion? Regarding the Dominance facet, table 7.3 shows that only the healthy/unhealthy foods set was related, and weakly (r = 0.15). No other measure of assertiveness was related to categorization in student sample 1. While dominance is related to ideology, it's not appearing as related to categorization here.

Student Sample 2.

In student sample 2, the correlations between categorization tests and ideological dimensions are, to me at least, disappointing—although they are more supportive than damaging to the idea that categorization strength is related to ideology in the expected direction. One possible reason for this is that the categorization tests conducted for this sample were conducted differently than for

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[3] Again, the reader will hopefully forgive me for using a mildly technically incorrect model, as attitudes on unilateralism are measured on a 5-point scale, which indicates ordered logit, not OLS. A continuous dependent variable is required for a Sobel test.

other datasets. For this dataset, categorization sets were switched from item to item. That is, a subject would categorize a single object pair as above-below or not (or click on the line), and in the very next item might categorize an object as a home appliance or not, then in the next item categorize a dyad of events as causally related or not. This may have weakened the results of categorization tests because subjects, rather than having categories become highly and singly activated, thereby allowing for accurate assessment of target objects' strength-of-membership, instead ended up with a thicket of mutually-interfering and cross-activated categories.

In student sample 2, many additional categorization tasks were added in a rather scattershot approach to finding whether certain types of categorization might better predict ideological thinking than others. It remains difficult to spot patterns—to say, that is, that one general class of categorization tasks is more related to ideology than others—but I will try to do so broadly. A number of the categorization tasks were, in this test at least, unrelated to political thinking.

Additionally, because I wanted to cast such a wide net and try many different kinds of categorization tasks, not every categorization task was administered to every subject. Some tasks are administered to small, randomly chosen subsamples, while others are administered to the entire sample.

At least some subjects, then, saw each of the following categorization-sets:

1. Categorizing dyads of events according to whether "A is the cause of B," "A is not the cause of B," or in-between. (N=163)
2. Categorizing objects as belonging to "Toys," "Not Toys" or in-between. (N=115)
3. Categorizing tasks as difficult, easy, or in-between. (N=101)
4. Categorizing behaviors as "helpful behaviors," "not helpful behaviors" in-between. (It is explained that "not helpful" does not mean harmful.) (N=113)
5. Categorizing behaviors as characteristic of a superior, characteristic of a subordinate, or in-between. (N=85)
6. Categorizing behaviors as "normal" or "weird" or in-between. (N=71)
7. Categorizing objects as "=tall," "not tall" or in-between. (N=114)
8. The above-below category-set. (N=167)
9. Categorizing objects or animals as "having consciousness," "not having consciousness" or in-between. (N=118)
10. Categorizing a relationship between two objects or beings as one *involving dominance* or one *not involving dominance* or in-between. (N=166)
11. Categorizing a given thought as "emotional," "not emotional" or in-between. (N=76)
12. Categorizing a behavior as "something a good friend does," "not something a good friend does," or in-between. (N=111)
13. Categorizing a face as evincing one of *three* emotions, or in-between emotions, in a triple-category set. (N=111)

14. Categorizing an activity as a member of the category "Arts," "Sciences," or in-between (N=133)
15. Categorizing behavior or description as "Essentially human," "Essentially animal," or in-between. (N=111)
16. The home appliance category-set. (N=136)
17. Categorizing a behavior according to whether "society approves," "society disapproves," or in-between. (N=132)
18. Categorizing a job into one of three categories. (See chapter 2 for details) (N=40)
19. Categorizing a briefly described person as "someone I identify with," "someone I don't identify with," or in-between. (N = 120)

As with student sample 1, each category-set's data was truncated to a reasonable maximum number of non-categorization choices by the participant, usually 5. The same transformations were applied so that categorization strength measures are standardized and higher scores indicate stronger categorization.

Step 1: Do the different categorization measures intercorrelate so that we might construct a general categorization measure? There is not sufficient overlap between category-sets for Stata to create a single measure from 18 category-sets without imputing values. However, it's clear from looking at the correlation table of all of the various categorization-set measures that they are generally tapping into something common. (This table available from the author upon request.) Out of 171 correlations in the table, under a null hypothesis of no relationship between the different categorization measures, we would expect 85 or 86 negative correlations, but instead we get 4. There would appear to be something about clicking inside the boxes that is attracting or repelling the same subjects across a variety of tasks.

Because of insufficient overlap, I created a general categorization measure partly by hand, beginning with the items that intercorrelated most strongly, and adding categorization measures which increased rather than decreased Crohnbach's α. The result of this exercise was two "general categorization strength" measures. The first, "general categorization 1" includes categorizing toys, cause-effect event dyads, helpful-unhelpful behaviors, tall-versus-short objects, above-below relations, conscious-unconscious objects, dominant relationships, things a friend does or does not do, and faces as emotional or not. The second, "general categorization 2," includes categorizing cause-effect dyads, things a human does or doesn't do, home appliances, things society approves of or does not, and dominant relationships.

We will see in step 2 that these categorization measures are mediocre performers, but that there is evidence that they do weakly predict ideology. As it turns out, many of the category-set responses simply don't correlate very strongly with ideology measures. That is, there is a lot of noise, as might be expected since I've thrown so many different categorization sets into the same survey.

So I created three additional categorization-strength measures. Each of these consisted of all categorization-set results that correlate with the three ideology dimensions at stronger than $p = 0.30$ *in either direction.* In other words, I am not

"cheating" by creating a measure of categorization that is constructed to predict ideology. If, say, six categorization measures correlate half the time with liberalism and half the time with conservatism, but always such that $p < 0.30$, then those six measures would be included in my categorization measure and the overall categorization measure would fail utterly to predict ideology. What this procedure does is simply to cull out the categorization sets that were essentially uncorrelated with ideology, and yields three categorization measures—one built on each dimension of ideology.

Nine categorization measures were correlated at $p = 0.30$ or stronger with tough-tender ideology—arts-versus-sciences, cause dyads, someone I do/don't identify with, dominance relationships, actions as helpful/unhelpful, objects as tall or short, things a friend does or doesn't do, objects as toys or not toys, and thoughts as emotional or not emotional. These measures yielded a "categorization$_{tough-tender}$" measure with alpha $= 0.77$.

A categorization$_{moral}$ measure consisted of normal/weird behaviors, difficult/easy tasks, things humans or animals do, cause dyads, what society approves or doesn't approve of, people I do or don't identify with, helpful or unhelpful actions, tall or short objects, things a friend does or doesn't do, and objects as toys or not toys, $\alpha = 0.63$.

A categorization$_{fiscal}$ measure consisted of normal/weird behaviors, arts-versus-sciences, things society approves or disapproves of, dominance relationships, emotional versus non-emotional thoughts, appliances, and toys, $\alpha = 0.76$.

Step 2 results. Do the categorization measures predict ideology? The answer is clearly yes. Looking first at the first general measure of categorization, "general categorization 1," it is correlated with fiscal, tough-tender and moral conservatism, rs $= 0.10, 0.12$ and 0.08 respectively, with one-sided p – values of 0.10, and 0.06 and 0.14. "General categorization 2" is correlated with the three dimensions with rs of $0.10, 0.17$ and 0.03, respective one-sided p – values of $0.09, 0.012$, and 0.36.

When categorization measures are scrubbed of poorly performing categorization tasks, the results are better, as shown in Table 7.7. Categorization$_{tough-tender}$ predicts fiscal and tough-tender ideology at conventional significance levels, and moral ideology at near-significance levels—and this is clearly the best-performing measure of categorization strength from this round of data collection. (However, for the combined-sample analysis at the beginning of this chapter, I used general categorization 1.) Its correlation with tough-tender ideology is particularly strong, which is unsurprising because, as it happens, every last categorization task in the measure correlates positively with tough-minded conservatism, even though they were only selected for their strength, not direction, of correlation. Categorization$_{moral}$ significantly, and in the right direction, predicts fiscal and tough-tender ideology, but is uncorrelated with moral ideology. Why? Because a number of the categorization-sets chosen for this measure correlated at better than $p = 0.3$ and in the *wrong* direction with moral ideology. It is clear, then, that categorization generally does a better job of predicting fiscal and tough-tender ideology in this dataset than it does moral ideology.

Table 7.7. Correlations of different categorization strength measures with ideological dimensions. Student sample 2.

Categorization strength measure	Corr. with tough-tender ideology	p – value (one-tailed)	Corr. with fiscal ideology	p – value (one-tailed)	Corr. with moral ideology	p – value (one-tailed)
General categorization 1	0.12	0.062	0.10	0.10	0.084	0.14
General categorization 2	0.17	0.013	0.102	0.099	0.026	0.37
Categorization$_{\text{tough-tender}}$	0.26	0.0003	0.18	0.011	0.117	0.065
Categorization$_{\text{fiscal}}$	0.18	0.009	0.117	0.065	-0.00	0.91
Categorization$_{\text{moral}}$	0.14	0.038	0.103	0.098	-0.01	0.86

N = 167; p – values two-tailed for negative coefficients because signed in wrong direction (cells shown in gray)

Categorization$_{\text{fiscal}}$ just misses significantly predicting fiscal ideology in the right direction, *does* predict tough-minded conservatism, and is uncorrelated with moral ideology.

What about self-identification? Does categorization again predict issue positions better than it does self-identification? And is this result flipped again for moral ideology? Yes, and yes, but only barely. Categorization$_{\text{tough-tender}}$ is correlated with self-identified fiscal ideology, r = 0.16, p = 0.02—slightly weaker than with the issue-based measure. It's correlated with general liberal-conservative self-placement, r = 0.21, p = 0.004—barely weaker than with tough-tender ideology. And the self-identified moral ideology measure correlates with categorization$_{\text{tough-tender}}$, r = 0.14, p = 0.039—just a little better than the issue-based moral ideology measure performs. Most importantly, perhaps, regressing issue-based fiscal ideology on categorization and including self-identified fiscal ideology as a covariate, categorization strength survives the control, β = -0.12, p = 0.037 one-tailed; and regressing issue-based tough-tender ideology on categorization and including self-identified *general* ideology as a covariate, categorization again survives the control, β = -0.15, p = 0.016.[4] Swapping the self-identified and issue-based measures in these regressions, categorization strength no longer significantly predicts the self-identified version of the dependent variable. Categorization strength mainly appears, then, to affect how people think about issues, not how they self-categorize as liberal or conservative.

In sum, categorization is indeed related in this dataset to ideology—especially fiscal and tough-tender ideology—in the right direction. There is slight evidence of a

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[4] I also included sex as a covariate in these OLS regressions.

relationship between categorization and moral ideology too, but it's interesting to note that were we investigating the relationship between cognitive rigidity and moral conservatism and using categorization strength as a measure of cognitive rigidity, we'd be left with virtually nothing to talk about. The relationships here are just too weak and not even consistently in the right direction.

   Step 3: particular issues and traits. Beginning with fiscal issues, recall that in student sample 1, the more abstract philosophical issues such as public-versus-private healthcare and government intervention in the economy were as strongly related to categorization as group-driven issues, such as government helping the poor. Is there

Table 7.8. Correlations of categorization-strength measures with individual fiscal issue positions.

Issue (conservatism scored higher)	r with $cat_{tough\text{-}tender}$	p-value	r with $cat_{general}1$	p-value	r with $cat_{general}2$	p-value
Tax rich to help poor	0.10	0.09	0.07	0.20	0.02	0.42
Gov't intervention in economy	0.15	0.027	0.08	0.15	0.14	0.036
Gov't help for poor	0.175	0.012	0.04	0.29	0.075	0.17
Public versus private healthcare	0.12	0.058	0.13	0.043	0.09	0.12
Regulations to help environment	0.24	0.0007	0.16	0.02	0.14	0.036

N = 167. All significance tests one-tailed since all coefficients signed in predicted direction.

a more discernible pattern here? Not really. Both of the general categorization measures and Categorization$_{tough\text{-}tender}$ (the only categorization measures I investigate in depth) are correlated in the right direction with every last economic issue (see table 7.8). The strongest relationships are with the Categorization$_{tough\text{-}tender}$ measure, which is significantly or near-significantly related to every fiscal issue. The one fiscal issue that's not included in the fiscal-conservatism scale, the preference for pro-environmental regulations on business, would appear to be another quite abstract issue, and categorization predicts it convincingly.

   Continuing with issues in the tough-tender dimensions in table 7.9 (except for environmental regulations and government helping the poor, which appear in table 7.8 with fiscal issues), the categorization$_{tough\text{-}tender}$ measure significantly and in the

right direction predicts nearly every one of them, failing only to predict the immigration question—a surprise if we believe that categorization strength should predict an aversion to the crossing of borders, or a preference for keeping different categories of people separated. This is especially surprising in light of the

Table 7.9. Correlations of categorization-strength measures with individual tough-tender issue positions.

Issue (conservatism scored higher)	r with $cat_{tough-tender}$	$p-$value	r with $cat_{general}1$	$p-$value	r with $cat_{general}2$	$p-$value
Death penalty	0.14	0.037	0.10	0.10	0.10	0.09
Foreign policy unilateralism	0.26	0.012	0.10	0.18	0.11	0.16
English only laws	0.24	0.001	0.16	0.017	0.20	0.004
Immigration	0.05	0.26	0.056	0.23	-0.02	0.78

N = 167 except unilateralism, N = 78. All significance tests one-tailed except bottom right cell, shown in gray, two-tailed, since signed in unpredicted direction.

fact that categorization predicts preference for English-only laws perhaps better than it does any other issue, which was of course expected, but is this not also an immigration-related issue? This may be a foreshadowing of a result to come in a later chapter. While theory suggests that categorization strength should be able to affect ideology via simple person categorizations (immigrant as alien) *and* by affecting people's style of deliberation about issues (categorization producing simpler, more directly and mechanically logical operations on concepts), it looks vaguely here, just looking at the English-only and immigration issues, as though conservatism about immigration is more reflective of a very direct form of reasoning ("Of course this is America, we speak English, why should we waste money on other languages?") than of a hypercategorization of individuals. In structural equation models later, this will recur. I am not, as of this writing, willing to say that no form of conservatism operates via hypercategorization of individuals, but the evidence for categorization affecting ideology via styles of deliberation is probably stronger at this point.

Categorization is not significantly correlated with any moral issue except for the question asking participants to indicate whether "abortion is murder." The results are shown in table 7.10. They are so weak as to suggest that one-tailed tests may even be improper here, unfairly generating the suggestion of a systematic effect despite the general failures to achieve significance. However, all but one cell shows a correlation in the expected direction.

Especially surprising is the failure of any categorization measure to predict opposition to physician-assisted suicide, in contradiction to one of the strongest findings of student sample 1. Should we throw out the previous result for physician-assisted suicide? Probably not: recall that the previous result was driven largely by the above-below categorization-set. In a regression controlling for sex and religious attendance (not shown here), above-below categorization did predict opposition to physician-assisted suicide significantly ($p = 0.02$ two-tailed). However, in student sample 2, moral issues are generally not strongly related to categorization in zero-order correlations.

Table 7.10. Correlations of categorization-strength measures with individual moral issue positions.

Issue (conservatism scored higher)	r with $cat_{tough\text{-}tender}$	$p-$value	r with $cat_{general}1$	$p-$value	r with $cat_{general}2$	$p-$value
Gay marriage	0.03	0.34	0.03	0.34	0.025	0.37
Abortion is murder	0.12	0.06	0.13	0.04	0.025	0.037
Alternative lifestyles	0.08	0.16	0.05	0.27	0.02	0.40
Ten Commandments and school prayer	0.11	0.07	0.07	0.17	0.04	0.29
Physician-assisted suicide	0.07	0.16	0.01	0.42	-0.01	0.89

N = 167. All significance tests one-tailed except bottom right cell, shown in gray.

In sum, little is gained in student sample 2 from looking at categorization and particular issues. We are left only with a general replication of the student sample 1 result that categorization strength generally seems to predict secular conservatism.

Is there an illuminating relationship between categorization and traits that can shed light on how categorization might affect ideological thinking? In student sample 2, I measured not only Big-Five traits, but also Ambiguity Intolerance (hereinafter AI; administered to a 100-subject subsample).

Strong categorization should be negatively related to Openness and like measures, and positively related to Extraversion and assertiveness. Correlational results indicate that, in an exact reversal of the first student sample, here the prediction regarding Openness fails, while the prediction regarding Extraversion is supported. See table 7.11. Moreover, we repeat the finding from Student sample 1

regarding Agreeableness: categorization strength appears mildly and negatively related to agreeableness. The failure of Categorization to correlate with Openness should be viewed with some suspicion, however, as the correlations between Categorization strength and ambiguity intolerance (which is strongly related to Openness, $r = -0.44$, $p = 0.0000$) are suggestive and, in light of other findings from other datasets, probably indicative of a real effect and not sampling error.

Figure 7.11. Correlations of categorization measures with psychological variables, student sample 2

Psychological variable	r with $cat_{tough\text{-}tender}$	$p-$value	r with $cat_{general}1$	$p-$value	r with $cat_{general}2$	$p-$value
Big-5 Openness	-0.09	0.21	-0.01	0.88	-0.04	0.64
Big-5 Agreeableness	-0.16	0.04	-0.10	0.19	-0.07	0.37
Big-5 Extraversion	0.20	0.008	0.24	0.002	0.147	0.057
Big-5 Conscientiousness	0.16	0.035	0.17	0.029	0.15	0.52
Ambiguity Intolerance	0.14	0.15	0.07	0.46	-0.135	0.18
Need Closure facet 1	0.171	0.02	0.174	0.03	0.20	0.01
Need Closure facet 2	0.115	0.14	0.146	0.057	0.07	0.35

N = 167. All significance tests two-tailed.

Even more convincing of an Openness-categorization-strength connection is a solid finding of a relationship between facets of Need for Closure and Categorization strength. Closure is measured in this sample using the same questions as in Student Sample 1. Again, the full battery of questions lifted from Kruglanski and Webster's scale failed to scale together, but yielded several facets with barely acceptable reliability. The first is comprised of questions asking whether a subject (1) dislikes questions that can be answered in many ways; (2) feels a need to know why an event occurred; (3) dislikes unpredictable situations; and (4) prefers familiar restaurants when dining out, $\alpha = 0.54$. The second facet consists of (1) being willing to consider a different opinion than one's own; and (2) enjoying interacting with people who have different opinions than oneself, $\alpha = 0.45$. The correlations aren't extremely high, but every categorization measure is significantly related to the first closure facet, which seems to measure a preference for certainty, a likely consequence (or, possibly but more doubtfully, cause) of high categorization strength. The second closure facet, a simple preference for hanging around people who think like oneself, is suggestively

related to categorization too. Both closure facets are significantly related to Experiential Openness in the sample, rs = 0.30 and 0.31 respectively, p – values both 0.0000, one-tailed.

I wondered whether these Need-for-Closure questions were simply acting as a proxy measure for categorization strength itself. In particular, the first facet, which seems to tap a simple "need to know now" could be precisely what's measured by my categorization task. Maybe strong-categorizing subjects aren't even "categorizing" things, but just trying to avoid clicking on the line which would appear to be a wimpy unwillingness to settle. Both of the Need for Closure facets significantly and independently predict tough-tender, fiscal, and moral conservatism in regressions that include *both* facets. Would including them in a regression with categorization strength reduce the significance of categorization strength? Or would there be evidence of mediation?[5]

Regressions predicting (a) tough-tender and (b) fiscal ideology with Categorization$_{tough-tender}$ but controlling for both closure facets are shown in tables 7.12 and 7.13. Categorization strength survives the controls and remains significant in both regressions, its coefficient having been reduced from 0.19 to 0.14 in the first, and from 0.16 to 0.12 in the second. Is this sufficient evidence to conclude mediation? A Sobel test for mediation through the first facet of Closure yields a coefficient to -0.2, $p = 0.12$, with 12% of the effect of categorization mediated, so there is only weak evidence for mediation. For the second regression, the results are similar but slightly weaker. So it would appear that categorization is not the same thing as Need for Closure, and does not affect ideology in exactly the same way as Need for Closure. But it's also likely from these results that the Need for Closure measures contain a clue as to how C-strength is working. In the main, this is another confirmation that categorization strength is part of a constellation of psychological phenomena, which include Need for Closure and which, together, are expressed as a discernible cognitive rigidity.

Additionally, although the categorization-Openness relationships is nonsignificant in zero-order correlations, if Extraversion is controlled for, Categorization$_{tough-tender}$ does, in fact significantly predict Experiential Openness. Moreover, there is near-significant evidence that a portion of the effect of Categorization on Ideology is mediated by Openness. In table 7.14, Tough-tender ideology is regressed on Openness, Categorization, Extraversion, and participant sex. A Sobel test yields a coefficient of 0.056, $p = 0.058$, indicating that 22% of Cat-strength's effect appears to be "mediated by Openness." Since I don't regard Openness itself as a theoretically pleasing mediator, I interpret this to imply more

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[5] And another opportunity to test this "Categorization strength = NFC" idea, in a different way, arises in the next few pages.

Table 7.12. Tough-tender ideology regressed on categorization *and* Need for Closure, OLS coefficients

Independent variable	Coefficient (Standard error)	p – value (two-tailed)
Categorization$_{tough\text{-}tender}$ (standardized)	0.19 (0.073)	0.01
Closure facet 1 (standardized)	0.23 (0.072)	0.002
Closure facet 2 (standardized)	0.21 (0.073)	0.004
Sex (0=M, 1=F)	-0.36 (0.14)	0.014
Constant	0.17 (0.10)	0.10
N = 165; R^2 = 0.186		

Note: all variables except sex standardized

Table 7.13. Fiscal ideology regressed on categorization *and* Need for Closure, OLS coefficients

Independent variable	Coefficient (Standard error)	p – value (two-tailed)
Categorization$_{tough\text{-}tender}$ (standardized)	0.15 (0.076)	0.055
Closure facet 1 (standardized)	0.19 (0.075)	0.012
Closure facet 2 (standardized)	0.16 (0.075)	0.031
Sex (0=M, 1=F)	-0.27 (0.15)	0.073
Constant	0.15 (0.10)	0.14
N = 164; R^2 = 0.117		

Note: all variables except sex standardized

Table 7.14. Tough-tender ideology regressed on Cat-strength, Openness, and covariates, OLS coefficients

Independent variable	Coefficient (Standard error)	p – value (two-tailed)
Categorization$_{\text{tough-tender}}$	0.198 (0.074)	0.008
Level of categorization coefficient before Openness added	*0.25 (0.077)*	*0.001*
Big-5 Openness	-0.35 (0.07)	0.000
Extraversion	0.124 (0.76)	0.104
Participant sex (0=M, 1=F)	-0.29 (0.14)	0.046
Constant	0.13 (0.09)	0.192

N = 169; R^2 = 0.16

Note: all variables except sex standardized

precisely that, as expected, categorization strength affects cognitive style in a way that is at least thematically related to FFM Openness, with pass-through effects on ideological thinking. The effects are only slightly weaker for fiscal ideology (Sobel p = 0.08), as shown in table 7.15.

There is some evidence from this sample that Categorization strength mediates the effect of Extraversion on ideology, and this would be consistent with the notion that a forward or authoritative disposition is causally prior to a cognitive style, but that a cognitive style might develop in service to that disposition—a cognitive style which would also drive political opinion formation. Regressing tough-tender ideology on categorization$_{\text{tough-tender}}$, Extraversion[6] and, as controls, Openness and respondent sex, yields the results shown in table 7.16.

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[6] In this case, I used a measure of Extraversion with questions selected to emphasize authoritativeness. It correlated with general Extraversion at r = 0.88. The questions asked the respondent to say whether it was an accurate description that he/she: (a) takes charge, (b) dislikes authority, (c) allows others to lead, (d) leads others, and (e) likes being in a position authority.

Table 7.15. Fiscal ideology regressed on Cat-strength, Openness, and covariates, OLS coefficients

Independent variable	Coefficient (Standard error)	p – value (two-tailed)
Categorization$_{tough\text{-}tender}$	0.15 (0.077)	0.049
Level of categorization coefficient before Openness added	*0.19 (0.078)*	*0.014*
Big-5 Openness	-0.27 (0.08)	0.001
Extraversion	0.105 (0.79)	0.185
Participant sex (0=M, 1=F)	-0.21 (0.15)	0.154
Constant	0.12 (0.10)	0.242

N = 164; $R^2 = 0.12$

Note: all variables except sex standardized

A Sobel test is significant, with Sobel coefficient of 0.05, $p = 0.03$, indicating that some of the effect (36%) of Extraversion on ideology is mediated through categorization strength. But with Extraversion in the role of the mediating variable, a Sobel test is nonsignificant ($p = 0.22$, with 9% of the effect mediated). So at least the data is more consistent with a model in which Extraversion is prior to C-strength than with the opposite causal ordering when the dependent variable is tough-tender ideology.

The results are similar but weaker for fiscal ideology, with the Sobel statistic approaching significance, $p = 0.10$, suggesting C-strength may also mediate between Extraversion and fiscal ideology. Again, I emphasize this is not a mediation effect that I hypothesize occurs "in the moment," but rather one that occurs through developmental time: C-strength would develop through childhood and adolescence to serve and facilitate an already assertive disposition.

Table 7.16. Tough-tender ideology regressed on Cat-strength, Extraversion, and covariates, OLS coefficients

Independent variable	Coefficient (Standard error)	p – value (two-tailed)
Categorization$_{tough-tender}$	0.20 (0.074)	0.006
Big-5 Openness	-0.34 (0.073)	0.000
Extraversion	0.10 (0.75)	0.181
Level of Extraversion coefficient before Cat-strength added	*0.146 (0.073)*	*0.047*
Participant sex (0=M, 1=F)	-0.29 (0.14)	0.04
Constant	0.14 (0.10)	0.171

N = 164; R2 = 0.12

Note: all variables except sex standardized

Extraversion is only weakly and nonsignificantly related to moral ideology in this sample, and there is no evidence of any mediation of categorization between Extraversion and moral ideology.

There is an opportunity here to test whether Need for Closure and categorization strength are really just proxy measures of each other, or whether categorization strength is "just ambiguity intolerance" as has been suggested. I inserted, alternately, Need for Closure and Ambiguity intolerance in place of Categorization$_{tough-tender}$ in the same mediational analysis of table 7.16. Both NFC and AI have strong direct effects on ideology in student sample 2 as shown in zero-order correlations in table 7.17. But there is not the slightest hint that Closure or Ambiguity Intolerance mediates the effect of Extraversion on ideology (Sobel statistics were tiny, with p – values all greater than 0.6).

That is, Extraversion appears to work *through* categorization strength to cause ideology, but not through ambiguity intolerance or Need for Closure. Categorization strength, however related to them, is *not* the same thing as Need for Closure or as Ambiguity Intolerance.

Table 7.17. Intercorrelations between Closure, Ambiguity Intolerance, and Ideological dimensions.

	Closure 1	Closure 2	AI	Fiscal ideo.	Tough-tender	Moral ideo.
Closure facet 1 (need to know now)	1					
Closure facet 2 (dislike being with people who don't agree w/me)	0.09 (0.12)	1				
Ambiguity Intolerance	0.54 (0.0000)	0.14 (0.08)	1			
Fiscal ideology	0.22 (0.002)	0.18 (0.012)	0.306 (0.0019)	1		
Tough-tender ideol.	0.27 (0.0002)	0.22 (0.003)	0.41 (0.0000)	0.59 (0.0000)	1	
Moral ideology	0.18 (0.01)	0.14 (0.03)	0.301 (0.0023)	0.24 (0.001)	0.29 (0.0000)	1

N = 167 except correlations with AI, N = 100. All significance tests one-tailed because all predictions are for positive coefficients and all coefficients are positive.

In sum, two samples now show categorization strength correlated in the predicted direction with ideology—especially non-moral ideology dimensions (thank goodness again that I didn't follow the advice to investigate only moral ideology). And although replication in detail is maddeningly difficult to achieve as seems typically the case with scale-based traits research, strong categorization is convincingly and negatively related to Experiential Openness and less convincingly, but probably, positively related to Extraversion, as predicted by theory. Moreover, categorization is not the same thing as other Openness-related measures. However related to self-report scales of cognitive flexibility and rigidity, or curiosity, or culturedness, none of these measures can be substituted for categorization strength in analyzing the roots of ideological thinking with any confidence.

There is another point to make about moral ideology. Categorization strength doesn't appear to have much, or any, direct impact on moral ideology in this dataset. But we should not forget that categorization strength is related to numerous Openness-related measures—Ambiguity Intolerance, Need for Closure, and Openness itself when Extraversion is controlled for. Low Openness is, in turn, reliably in these datasets and in other cited research, related to moral conservatism. If strong categorization causes low Openness, then it would appear unlikely that strong categorizers, who are more likely to be fiscally conservative and tough-minded, would be political enemies of moral conservatives, even if the full pathway from Categorization via Openness to moral ideology is too weak to be found in datasets of

the sizes presented here. In other words, even if Categorization's effect on moral ideology is small or indirect, as an early and elemental part of the constellation of cognitive-rigidity measures it still helps to explain why moral conservatives and other conservatives might be more than allies of convenience or historical accident. Later in this dissertation, of course, I will explore the possibility that moral conservatives, while perhaps only slightly higher than moral liberals in categorization strength, are drawn to leaders who are likely to be much higher in categorization strength.

Do certain *types* of categorization tasks predict ideology best?

Before turning to an analysis of the Tallahassee adult sample with respect to whether categorization strength is related to ideology, there is another way of looking more in-depth at categorization. That is to ask: which category-sets predicted ideology? And is there any obvious reason that "jumps out" as to why some might have performed better than others? Setting aside moral ideology (since it was so weakly related to categorization in student sample 2), table 7.18 lists the different category-sets in descending order of their relatedness to tough-tender and fiscal ideology. The idea here is to look over the lists and make a qualitative judgment about whether a certain class of categorization task seems to be most important for ideology.

I leave it to the reader to decide whether he or she sees anything particularly impressive, but your author sees nothing notable except that the same two categorization tasks are #1 and #2 for both ideological dimensions. Seeing thoughts as either emotions or not emotions—perhaps a more simplistic conceptualization (via categorization) of what an emotion is, is characteristic of conservatives of both dimensions, and seeing behaviors as helpful or not helpful, as opposed to somewhere in between, is also characteristic of conservative-thinking individuals. It is tempting to view these tasks as categorizing "human"-related things as opposed to abstract ideas ("above-below") or inanimate objects (toys, appliances), but there are plenty of human-related categorization tasks ranked near the bottom of both lists, and abstract tasks are not immune from performing relatively well ("A is the cause of B" helps to predict tough-tender ideology). Try as I might, I cannot convince myself that I see anything meaningful in the order of categorization tasks, but here is the table for the reader to peruse, and I welcome any suggestions of a pattern. Instead, what I see is a general tendency for conservatives to categorize a little more than liberals, and a likelihood that the "emotions-not emotions" and "helpful / unhelpful behaviors" tasks just happened to be the best-designed tasks in my survey, the ones in which the items I came up with simply did the best job of differentiating strong from weak categorizers.

Table 7.18. Which categorization tasks predict ideology best?

	Cat. set predicting TOUGH-TENDER ideology	r with tough-tender ideology		Cat. set predicting FISCAL ideology	r with fiscal ideology
1.	Emotions / not emotions	0.300	1.	Emotions / not emotions	0.187
2.	Helpful / not helpful behaviors	0.166	2.	Helpful / not helpful behaviors	0.166
3.	Dominance relationship	0.149	3.	Things a friend does	0.125
4.	A is the cause of B	0.145	4.	Faces / emotions	0.110
5.	Arts-versus-sciences	0.144	5.	Normal behaviors / not normal	0.103
6.	Toys / not toys	0.124	6.	Toys / not toys	0.102
7.	Job categories	0.116	7.	Dominance relationship	0.087
8.	Tall / short things	0.097	8.	Society approves / disapproves	0.084
9.	Appliances / not appliances	0.093	9.	Arts-versus-sciences	0.078
10.	Things a friend does	0.088	10.	Appliances / not appliances	0.074
11.	Someone I identify with	0.074	11.	Tall / short things	0.066
12.	Society approves / disapproves	0.060	12.	Above / below	0.059
13.	Conscious / unconscious things	0.046	13.	A is the cause of B	0.046
14.	Faces / emotions	0.027	14.	Job categories	0.042
15.	Above / below	0.012	15.	Conscious / unconscious things	0.042
16.	Difficult / easy tasks	-0.003	16.	Things a leader does	-0.003
17.	Normal behaviors / not normal	-0.047	17.	Difficult / easy tasks	-0.007
18.	Things a leader does	-0.057	18.	Someone I identify with	-0.043

Tallassee adult sample.

By the third data-gathering mission, the technique for measuring categorization strength was beginning to be refined. Category-sets were administered one-at-a-time rather than interspersed: all the "appliance" tasks were given one after the other, then all the "above-below" tasks, and so forth. Theoretically, this should allow a subject to make "cognitively active" a particular category, and leave it in an activated state without interference until that particular set of categorization tasks is complete.

Still, I wanted to investigate many different types of categorization and their effects on ideology—objects, object relationships, event relationships, and so forth. Hence, many category-sets were used in the Tallahassee sample, and most were administered to only small subsets of participants. Five category sets were administered to the entire sample: A-is-the-cause-of-B versus not-the-cause; above-below relationships; dominance or equal-to-equal relationships; society approves-disapproves; and home appliances versus not-home-appliances. The approve-disapprove series had changed by the time the Tallahassee sample was recruited: now, rather than having participants categorize behaviors in terms of whether society approves, they categorized behaviors according to whether *they themselves* found them "morally OK" or "*not* morally OK." The target items for categorization did not change, however.

Step 1 results. The most basic categorization measure was drawn from responses to these five category-sets. Each category-set's data was truncated to limit the maximum number of "clicks on the line," then each set's result was standardized and combined into an additive scale, $\alpha = 0.64$. This alpha indicates that the five categorization tasks mostly appear to tap a common latent variable, as do the tasks' intercorrelations shown in table 7.19.

Table 7.19. Intercorrelations of 5 categorization tasks which were given to full Tallahassee sample.

	A the cause of B	Above-below	Dominance relationship	OK, not OK	Appliances
A the cause of B	1				
Above-below relationship	0.37 (0.0001)	1			
Dominance relationship / equal-to-equal relationship	0.46 (0.0000)	0.16 (0.09)	1		
Morally Ok, not OK	0.42 (0.0000)	0.32 (0.0007)	0.32 (0.0008)	1	
Appliances / not appliances	0.26 (0.006)	0.02 (0.79)	0.26 (0.007)	0.07 (0.45)	1

N = 112. Two-tailed *p* – values in parentheses.

It is clear that the one physical-object-categorization set, appliances-versus-not, in this group did not correlate as well with the other four categorization sets as they did with each other, and this is reflected in the fact that Crohnbach's α improves to 0.67 if the appliance-categorization set is dropped from the scale. Hence, I will use two general categorization measures as a starting point for analysis, one with and one

without the appliance task included, respectively called categorization$_{general}$ and categorization$_{no\text{-}appliances}$. They correlate at r = 0.95.

The next step is to see which of the other categorization-set results—the ones given only to subsets of the sample—correlate significantly or nearly so with these two general categorization measures, so as to create the most global measure of categorization possible. Included are category-sets by now familiar: difficult/easy tasks; toys/not-toys; helpful/not-helpful behaviors; things a superior does/subordinate does; normal/weird behaviors; conscious-versus-not-conscious things; emotional-versus-not-emotional thoughts; facial emotion categorization; arts/sciences; essentially human/essentially animal things; "someone I identify with" versus "don't identify with"; what a good friend does/not what a good friend does; and job categories. Do any of these other tasks, generally administered to around 40 subjects each, significantly correlate with the two general categorization measures?

The rather stunning answer is that *every single one of them does*, as shown in table 7.19. Either something about the sample makes this southern group a good match for my test, or I had by this point dramatically improved the task—not only, perhaps, via the lack of interspersion, but also through incremental improvements in the instructions—the kinds of improvements that are to be expected over the course of a multi-sample research program.

Table 7.20. Correlation of general category-set measures with small-subsample category-set measures

Small-subsample categorization measure	corr with Cat$_{noappliances}$	corr with Cat$_{general}$	N
What good friend does / Not what good friend does	0.62***	0.61***	39
Difficult/easy tasks	0.46**	0.51***	39
Toys/not toys	0.32*	0.46**	42
Helpful/not helpful behaviors	0.59***	0.59***	42
What superior/subordinate does	0.36**	0.40**	45
Normal/weird behaviors	0.25†	0.29*	35
Has consciousness/Does not have consc.	0.73***	0.63***	31
Emotional/not-emotional thoughts	0.41**	0.38*	35
Photos of faces, categorized by emotion	0.45**	0.45**	35
Essentially human things/animal things	0.35*	0.36*	31
Someone I do/don't identify with	0.34*	0.32*	36
Categorizing jobs (arts jobs, managerial, etc.)	0.40**	0.46***	42
All significance tests one-tailed.			

I standardized each of the subsample-administered category-set results, and combined them all into a single measure simply by taking the average, for each subject, over every categorization-set task they performed except for the "global five," resulting in a measure I call categorization$_{subsamples}$. No alpha is available, but this measure correlates with categorization$_{general}$ and categorization$_{noappliances}$ at r = 0.62 and r = 0.64, respectively, p – values both = 0.0000, N = 113.

Table 7.21. Partial correlations between categorization measures and issue-based measures of ideology, Tallahassee adult sample (sex-controlled)

	Categorization$_{general}$	Categorization$_{noappliances}$	Categorization$_{subsamples}$
Tough-tender ideology, issue positions	0.23 (0.008)	0.24 (0.005)	0.278 (0.001)
Fiscal ideology, issue-positions	0.190 (0.023)	0.191 (0.02)	0.066 (0.25)
Moral ideology, issue positions	0.103 (0.14)	0.123 (0.10)	0.05 (0.3)
Fiscal ideology, self-identified	0.08 (0.19)	0.10 (0.13)	0.06 (0.26)
Social ideology, self-identified	0.14 (0.08)	0.16 (0.05)	0.09 (0.16)
General self-ID lib-con	0.22 (0.013)	0.26 (0.003)	0.18 (0.03)
N=112; one-tailed p – values in parentheses			

We can move on, then, to step 2 having quite well established that the categorization measures are tapping a common latent property.

   Step 2 results. Does categorization predict ideology in the Tallahassee sample? Yes it does. Partial correlations are shown in table 7.21, controlling for the sex of the respondent.

   As we've seen now multiple times, categorization appears related to all three dimensions, but most strongly to the tough-tender dimension, and then to the fiscal, and not even very convincingly to the moral dimension—this in a sample which is unlike the northern samples in that moral ideology is very strongly correlated with the other two dimensions. Indeed, controlling for issue-measured tough-tender ideology, the coefficient on categorization strength when predicting moral ideology is essentially zero.

   Additionally, categorization seems generally to correlate with tough-tender and fiscal ideology *as measured by issues* more strongly than with *self-identified* ideology—although this time the general liberalism-conservatism measure does show a very strong correlation with categorization. Does this suggest that self-identified ideology could drive categorization, that conservatives are showing "certainty" in categorization tasks *because they consider it their ideological duty to do so*? Probably not. A partial correlation in which categorization$_{noappliances}$ is "predicted" using both issue-measured tough-tender ideology and self-identified general ideology as competing variables demonstrates that the stronger relationship is between categorization and issue-based ideology. This result is shown in table 7.22.

Table 7.22. Partial correlation of general categorization measure with tough-tender and self-identified general ideology

Categorization$_{general}$ corr. with…	Partial correlation	p – value (one-tailed)
Tough-tender ideology, by issue positions	0.196	0.021
Self-identified general liberalism-conservatism	0.07	0.465

   It should be noted that this result does not hold for fiscal ideology. Including self-identified liberal-conservative ideology in a regression predicting categorization strength does reduce the "effect" of issue-based fiscal ideology to near zero and nonsignificance. This possibly could imply that the effect of categorization on fiscal issues "runs through self-identification," but this conclusion is certainly not compelled.

   Step 3 results. Next we investigate the relationship between categorization and various specific issues. The tough-tender factor is made up of the familiar death-

penalty, immigration, English-only-laws, government-helping-the-poor, and foreign-policy-unilateralism questions. In zero-order correlations not shown here, at least one of the three categorization strength measures is significantly related to every one of these issues except for unilateralism, with which categorization strength rather surprisingly shows absolutely no relationship. Other than unilateralism, every last correlation is in the right direction and they range from 0.13 to 0.26. If there is a pattern here, it is that, when an identifiable outgroup—criminals, the poor, immigrants—forms a target for derogation, categorization strength predicts conservatism. However, this pattern was not found in previous datasets, so it would be foolish to read much into it here.

For fiscal ideology, the issues used are taxing the rich, government intervention in the economy, public-versus-private healthcare, environmental regulation, unilateralism (again), government-helping-the-poor (again) and the new income-tax fairness question. Results are weaker for these issues, but generally in the right direction—except for the categorization$_{subsample}$ measure, for which results are essentially random. The correlations between categorization and fiscal issues are shown in table 7.23.

Table 7.23. Correlations between categorization measures and fiscal issue positions, Tallahassee sample

Issue position (conservatism higher)	Corr with Catstrngth$_{general}$	Corr with Catstrngth$_{noappliances}$	Corr with Catstrngth$_{subsamples}$
Tax rich to help poor	0.11 (0.12)	0.107 (0.13)	-0.03 (0.74)
Gov't intervention in economy	0.14 (0.07)	0.13 (0.09)	-0.05 (0.60)
Gov't doing enough to help poor	0.17 (0.038)	0.16 (0.05)	0.13 (0.08)
Public versus private health care	0.15 (0.06)	0.164 (0.041)	0.09 (0.17)
Regulations to help environment	0.04 (0.35)	0.04 (0.32)	-0.04 (0.68)
Fairness of income tax	0.11 (0.13)	0.136 (0.075)	0.08 (0.21)
Foreign policy unilateralism	-0.06 (0.67)	-0.06 (0.65)	0.045 (0.37)
$N = 112$; one-tailed p – values in parentheses, except where unpredicted sign, two-tailed (and shown in gray)			

From this we cannot say that any particular type of fiscal issue relates more closely to categorization. For example, although government-helping-the-poor is the strongest item for correlating with categorization, it's not the case that more abstract fiscal issues, ones which fail to mention outgroups such as "the poor," underperform. It just seems that, generally, fiscal ideology is related to categorization, only less strongly than is tough-tender ideology.

And what about moral ideology? The issues used in the moral ideology scale are gay marriage, abortion, alternative lifestyles, Ten Commandments, physician-assisted suicide, and Constitutional literalism. The correlations are shown in table 7.24.

Table 7.24. Correlations between categorization measures and moral issue positions, Tallahassee sample

Issue position (conservatism higher)	Corr with $Catstrngth_{general}$	Corr with $Catstrngth_{noapplicances}$	Corr with $Catstrngth_{subsamples}$
Gay marriage	0.16 (0.04)	0.147 (0.06)	0.09 (0.19)
Abortion is murder	0.06 (0.25)	0.03 (0.39)	-0.13 (0.18)
Alternative lifestyles	0.11 (0.13)	0.06 (0.26)	0.08 (0.20)
Physician-assisted suicide	0.20 (0.016)	0.20 (0.018)	0.09 (0.15)
Constitutional literalism	0.025 (0.35)	0.06 (0.24)	0.03 (0.38)
Ten Commandments, prayer in schools	0.06 (0.26)	0.046 (0.31)	0.054 (0.28)
$N = 112$; one-tailed p – values in parentheses, except where unpredicted sign, two-tailed (and shown in gray)			

Here, in an interesting repetition of findings from student sample 1, physician-assisted suicide (PAS) is the only issue that is convincingly related to categorization strength. It is related in the right direction and significantly, 0.016, one-tailed. Why would PAS be the one moral issue that is significantly determined by categorization? One possibility I examined was that, perhaps, of all the issues, opinion on physician-assisted suicide is the least related to religious instruction. But the correlation between religious attendance and conservative opinion on PAS is a hefty 0.42, $p =$

0.0000, which is about as strong as correlations between religious attendance and other moral issues, which range from 0.42 to 0.50. (Constitutional literalism is not significantly related to church attendance). The only Big-Five trait which significantly predicts opinion on this issue is Agreeableness, and in the Tallahassee sample more agreeable people are significantly more *against* physician-assisted suicide. Agreeableness is not related to categorization in this sample. Ultimately, given the weak relationship between PAS and the subsample-driven measure of categorization, I am inclined to believe that the stronger correlation between PAS and the general categorization measures is simply an accident of sampling. It appears that, generally, the correlations support the idea that there is some weak relationship between categorization and conservatism on moral issues—very possibly not directly causal.

Finally, there was a question asking whether it is a good idea for judges to make use of foreign precedent in making decisions, asked of a 53-subject subsample of the Tallahassee sample but not included in any ideological factor. It was not significantly related to the general categorization strength measures in the Tallahassee sample, $rs = 0.12$ and 0.15, but was significantly related to Categorization$_{subsamples}$, $r = 0.26$, $p = 0.03$. It seems likely that categorical thinking probably does contribute to an opinion that American judges should not allow their thinking to be contaminated by foreign jurists. This belief is clearly a conservative one, although not the strongest belief one will find among conservatives: it is correlated with both tough-tender and fiscal conservatism, measured by issue position, in the Tallahassee sample, $r = 0.25$, $p = 0.07$ and $r = 0.265$, $p = 0.055$, two-tailed, and with self-identified fiscal conservatism, $r = 0.29$, $p = 0.04$. It is not positively related to moral ideology in any measure I observed.

It appears, then, that categorization strength has relationships with various political issues across the spectrum such that more categorization predicts more conservatism of all kinds. However, in the Tallahassee sample as in other samples, issues that seem to turn on tough or tender-mindedness toward outside entities are most closely related to this cognitive style, followed by fiscal issues, and finally by explicitly moral issues. Two issues bucked this pattern—physician-assisted suicide, which may be strongly related to categorization by accident or perhaps because of all issues it represents the most "radical" idea of "change"; and tolerance for foreign precedent in American jurisprudence, although this issue—not a member of any ideological scale—quite intuitively does tap notions of outside contamination sharing this aspect with immigration issues. In fact, categorization provides a nice explanation for why opposing the use of foreign precedent should be a "conservative" position at all.

Finally, a look at traits and categorization. Did categorization strength maintain a relationship with Openness and Extraversion in the Tallahassee sample as with the northern students? Unfortunately, for the Tallahassee sample I did not measure Big-Five Extraversion. I had, at the time of gathering the data in the spring of 2008, begun focusing on specific facets of Extraversion. What I did gather was

self-reports on dominance and on "decisiveness," a scale which was made up of questions about whether the subject considers him- or herself "indecisive"; changes her mind often; makes "decisions with confidence" without "looking back"; or "takes charge." The decisiveness scale was just adequately reliable, $\alpha = 0.66$.

The dominance scale was uncorrelated with categorization strength. However, decisiveness was significantly and positively correlated with categorization$_{subsamples}$, r $= 0.25$, $p = 0.004$ one-tailed, though nonsignificantly related in the predicted direction to the two main categorization measures (r $= 0.01$ and r $= 0.07$). The results for Big-Five Openness are more conclusive, with categorization$_{general}$, categorization$_{noappliances}$ and categorization$_{subsamples}$ all related to Openness, rs $= 0.23$, 0.24 and 0.29, ps $= 0.007$, 0.005 and 0.0009, respectively. Categorization is even more strongly related to AI in the Tallahassee sample, rs $= 0.29$, 0.23 and 0.39, $p = 0.015$, 0.046, and 0.002, one-tailed, based on an N of 55 (the ambiguity intolerance series was only asked of half the participants). This raises again, as has been mentioned, the possibility that categorization strength is "just another measure of intolerance of ambiguity" and hence a useless and superfluous measure. I take up this issue directly in a later chapter.

In a replication of the findings from student sample 1, categorization strength in the southern sample is quite convincingly related to Conscientiousness, with rs of 0.25, 0.23 and 0.26, and p – values of 0.007, 0.015, and 0.006, two-tailed, for the general, no-appliances, and subsample measures of categorization strength.

In sum, then, we have confirmation of what the northern student sample showed, with some nuance. First, Openness-family variables are negatively related to categorization strength. Seeing the world in strong categories is at very least part of a cognitive style characterized by more rigidity, less tolerance of ambiguity, less interest in art and culture, and so forth. Next, Extraversion is surely positively related to categorization strength. This finding does not replicate cleanly every time, but strongly significant evidence in its favor has been found in two out of three samples from two different locales, so an Extraversion-categorization link is by this point extremely difficult to dislodge. Next, it is probably the case that conscientiousness is also related to categorization, as this finding too has appeared more than once. Any (negative) relationship between Agreeableness and categorization is so far reserved to the northern sample.

There is an additional and welcome finding, regarding traits, from the Tallahassee sample which was not possible with the northern samples, because the level of educational attainment in the student samples had close to zero variance. I have stated confidently that categorization strength is part of a group of phenomena which constitute a broad picture of cognitive rigidity. But I have been less confident in stating that categorization strength is causally prior to those other psychological variables. Theoretically I believe a good case has been made that it can explain political opinion formation better than, say, Big-Five Openness, which gives the variable a unique value. But is this apparently more pure cognitive process variable

really more "prior," more "hard-wired" and hence more likely to be a first cause of cognitive rigidity generally?[7]

We have discussed already that there is some evidence that categorization strength "causes" opinion formation rather than the other way around because it is generally (though not uniformly) better correlated with factors drawn from issue positions than with ideological self-identification. But there is an additional opportunity in the Tallahassee sample to conduct a test that would bring some evidence to bear on the causal-order question. Since the Tallahassee sample varied in educational attainment—and since, in theory, educational attainment should increase Openness and tolerance for multiple perspectives (that is, should decrease Intolerance of Ambiguity), if Categorization strength is "hard-wired" or more basic than trait-type measures of cognitive rigidity, education should have a more profound effect, in the direction of more Openness, on traitlike measures of cognitive rigidity than on categorization strength.

And indeed, education is more closely related to Big-Five Openness and to Ambiguity Intolerance than to Categorization strength (or other cognitive process variables, to be covered in a later chapter), as shown in the correlations of table 7.25.

Table 7.25. Correlation of educational attainment with psychological variables, Tallahassee sample:

Correlation of education with…						
Big-5 Openness	Ambiguity Intolerance	Catstrngth, general	Catstrngth, no-app's	Catstrngth, subsamples	Deliberative complexity	Attributionism
0.26 (0.006)	-0.25 (0.06)	-0.12 (0.22)	-0.12 (0.22)	-0.14 (0.14)	-0.03 (0.75)	0.002 (0.98)

Significance tests two-tailed; N = 113 except Amb. Intolerance, N = 55.

This table is suggestive, but cannot be taken as definitive support for the "categorization is primary" hypothesis; note that education does appear, at levels approaching significance, to have a minor effect on categorization such that more educated people "click on the line" more often, displaying lower categorization strength. (And we also must concede that the low Categorization-education correlations could be due to the noisiness of the categorization measure.) But the effect of education on Openness and Ambiguity tolerance is almost indisputable. It's about the same size for both variables, and only less significant for ambiguity intolerance because of the smaller N. It's probably the case that there is endogeneity between all the variables in the table—more education probably reduces categorization strength, ambiguity intolerance, and closedness to experience, but it's also probably the case that more open-minded, less categorizing, and more ambiguity-tolerant people seek more education; strong categorizers probably have

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[7] More likely, that is, than traditional trait variables

lower ambiguity tolerance, but a lowering of ambiguity intolerance, say, through education, probably does have effects on categorization strength too; and so forth. But the overall pattern does seem to imply that attempts to "open the human mind" can generate a purposefully developed willingness to tolerate other perspectives (some might cynically say "a feigned Openness"), but that such educational efforts do less, as would be expected, to reach into the depths of the mind and alter basic styles of pre-conscious perception. And those processes, it would appear, do have political implications. However ardently liberal educators might hope for it, we cannot educate liberalism into the populace!

Chapter 8

New cognitive-process variables: Deliberative complexity and attributionism

On June 27, 2008, New York Times columnist David Brooks wrote admiringly of a vision for a modern conservatism articulated in a recently published book by Douthat and Salam (2008) and designed to appeal to "everyman." He begins by quoting from the book:

> "What all these ideas…have in common is a vision of working-class independence—from bosses, from bureaucracy, from entrenched interests of all kinds," Douthat and Salam write. This is not compassionate conservatism…, it's hard-work conservatism, which uses government to increase the odds that self-discipline and effort will pay off."

Here is a vision of conservatism as de-complexification. People want to be *independent* from complicating situations. "People"—conservatives—want government to tighten the connection between what you *do* and what you *get*, between action and consequence. To the regular guy, as well as to the wealthy man who merits, or imagines that he merits, his fortune, liberal talk about differential life chances, situational factors, societal fairness, redistribution of rewards, external loci of control, and so forth sounds like a muddying of crystal-clear waters, changing the just outcomes of life's contests after the fact. Of course, on the other hand, to liberals, this "everyman's" hyperconsequentialism sounds like a strategy to ignore undeniable if difficult-to-articulate complex structural conditions that cause injustice whatever the effort level of individuals.

Can we measure the styles of thinking underlying these differences?

Introducing two new variables

Having established that there is some connection between performance on a categorization task and political opinion formation, it is obviously important to investigate the process that connects them. What mediates between a perception of the world as categorized and the output of a political opinion? I can only begin to answer this question here, but begin I shall.

Of course, one possibility is that strong or weak categorization leads almost directly to certain opinions. It is possible, for example, that strong categorization of things generally necessarily means that people, as the most fundamental "objects" of politics—are themselves categorized more strongly. Outsiders are "more outside." The policy implications of such a strong person-categorization on a multitude of issue areas—immigration, crime, poverty, foreign policy, race—are obvious, and invariably conservative by conventional understanding.

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Another possibility is that strong categorization leads to a more rigid, mechanical, or "firmly logical" style of cognitive *deliberation*. The example I've used multiple times already involves the mechanical perception of *reward* and *desert*. The categorical view would understand these concepts in simple terms: expended effort generates deservingness, while the less categorical view would find "desert" to be rather fuzzily defined. It might, for example, be original to a person rather than necessarily the result of effort. It might accrue to someone who has been wronged, or who has suffered pain—even of their own doing. It might not be so clear that "winners deserve the most." In fact, the concept might be so indistinct as to generate a feeling of suspicion about the concept itself: do people really "deserve"? This suspicion need not be experienced as a conscious and radical rejection of such an everyday concept—just a somewhat lower comfort level with using it to analyze and understand human interactions. "Reward," too might be a fuzzy concept to the weak categorizer. Is money obviously the proper reward for deservingness? Is anything unambiguously "rewarding"? A statement such as "motivation is the result of potential reward; reward is getting more stuff; and desert is a state in which, due to effort expended as a result of motivation, you are morally due a reward" might seem internally consistent and mechanically logical, but weak categorizers would feel suspicious of it, possibly for reasons they could not immediately articulate. Strong categorizers, while perhaps willing to admit that the statement as written was mildly exaggerated in its stark simplicity, would find weak categorizers' hesitance to endorse it in spirit to be a perverse unwillingness to recognize an obvious, almost mathematical, result.

In fact, broad and intangible concepts such as motivation, desert, and reward, like the political concepts property, freedom and citizenship, are likely simply to be understood differently by strong and weak categorizers, so that when they deliberate on elemental concepts of democracy, the two types are actually deliberating on different kinds of objects. Clearly, this would affect how deliberation—whether conscious or below the level of consciousness—occurs, and the resulting attitude outputs.

Desert and reward need not be the only elemental objects of deliberation subject to categorization effects, although they may be the most relevant to democratic politics. One can think of others which seem plausibly connected to conservative policy position outputs: for example, the U.S. is short of oil, and gas prices are high. The solution? "Drill here, drill now." Whether or not this is a good policy choice, for a strong categorizer the issue is quite settled by this undeniable logic. That liberals drag in additional considerations—wildlife, aesthetics, and complicated economic analyses showing that gas prices will only drop by $0.01 per gallon, and only several years into the future, and only if geologists are right about where the oil is—must seem like perverse lunacy in service to a radical and emotion-driven anti-productivity agenda. It's not that the categorizer denies the existence of these considerations—it's that his cognitive "decision compartment" doesn't contain them, and hence weak-categorizing liberals appear to be wildly inflating their importance. To the categorizer, it's simple: we *need* oil. We *have* oil, right there in the ground. But no, the liberals say let's don't go get it.

On the part of liberals, even enumerating these "other considerations" may feel like an artificial narrowing, a needless employment of logical-sounding sophistry that supports an anti-drilling stance. For liberals, it may just feel like "for so many other reasons," drilling just seems unwise.

To test whether this kind of deliberative-style pathway was plausible, I needed to measure my participants' style of cognitive deliberation along these lines. And for reasons already given, Experiential Openness did not strike me as theoretically satisfying in this regard. Openness is not cognitive style; it is largely a self-report of intra-psychic pleasure or displeasure in response to various experiences: philosophical conversations, going to art galleries, and so forth.

Ambiguity intolerance is perhaps a slightly better candidate for measuring cognitive style, with its emphasis, in certain questions (and especially in the questions I chose from the MacDonald and Budner scales for my surveys) on preferences for "clear-cut answers." It's easy to imagine that someone whose logic is more "clear-cut" prefers logical outcomes that reflect this. But I sought measures that tapped deliberative style more directly, not people's levels of pleasure in response to various kinds of activity or statements. The result of this need was two new measures which I introduce here.

It seemed that I wanted to measure something similar to *integrative complexity*. This measure, as developed by Tetlock (1983, 1984) and discussed previously, combines two concepts: the extent to which people see multiple perspectives as applicable to an issue; and the level of integration of those perspectives in their thinking about the issue. However, Tetlock's measure is a content-analysis measure applied to political speeches, rendering it a cumbersome instrument to use in a survey context.

I simply desired a measure of the extent to which participants followed a very direct and mechanical, versus a diffuse and vaguely-defined, logic in considering a question about the state of the world. I wanted to measure the extent to which people deliberated in complex versus direct ways.

Let me pause for a moment, though. If I am arguing that ideology is the result of differential deliberation styles, what do I then make of arguments, such as Haidt's (2001), that reasoning is typically a post-hoc rationalization for judgments already reached via a "social intuitionist" model. I generally agree with Haidt: *conscious* reasoning is indeed largely rationalization. I am arguing here that the "social intuition" to which Haidt refers contains the elements of a deliberation that may become conscious later. Social intuitions, that is, are not random or capricious thoughts that are to be rationalized later. They are built on perceptions and pre-conscious judgments about how the world works, and what elements in a decision environment are relevant for the decision—with strong categorizers perceiving fewer such elements as relevant (and not necessarily consciously). In fact, while strong categorizers would probably argue that my "reward-motivation-desert" characterization of their thought process was overly simplistic, and weak categorizers might argue that they're being much more tightly logical than I've suggested, I would suggest that these protestations are *built on their conscious experiences of Haidt-like*

post-hoc rationalizations! Their "social intuitions," however, more closely resemble the caricatures as I've described them.

Haidt's argument is part of an emerging tradition including the work of Zajonc (1980) which argues for the "primacy of affect" and generally holds that conscious deliberation is something approaching an epiphenomenon which occurs after *affect* has determined behavioral outputs. Although C-theory is quite firmly a "cognition" theory, I see little if any conflict between C-theory and the "primacy of affect" view.

A claim that affect primacy is in conflict with any role for conscious deliberation would appear to assume that affect and cognition are wholly separable processes, with one occurring entirely before the other, the "earlier" process being privileged to determine behavior entirely. Clearly this is not the case. Even to the extent that emotions can be differentiated from other mental functions, emotions react to cognitions as well as to external stimuli. Indeed, a *relationship* among different objects or concepts (such as a political problem) makes for an attitude object itself, upon which affect may act very quickly—but not before "cognition" has created the object. C-theory argues that judgments—including hot, emotional ones—about politics nonetheless depend on the construction and understanding of the political problem. Differential categorization produces *different-appearing* problems to liberals and conservatives. So political ideology is not just a matter of whether people's first emotional reaction to, say, a warhead or a Bible or a white person is positive or negative. Indeed, much of politics probably consists in emotional reactions to constructed, complicated objects such as inter-class relationships or economic transactions, which cannot be evaluated "without any cognition" the way we evaluate a snake or a swinging battleaxe.

So even if affect is lightning-quick, I do not accept that this renders deliberative style irrelevant to political opinion formation. And so we seek a measure. This measure, which I call "deliberative complexity" (DC), would be a theoretically better candidate for mediation between categorization and opinion formation than any motivational or trait variable.
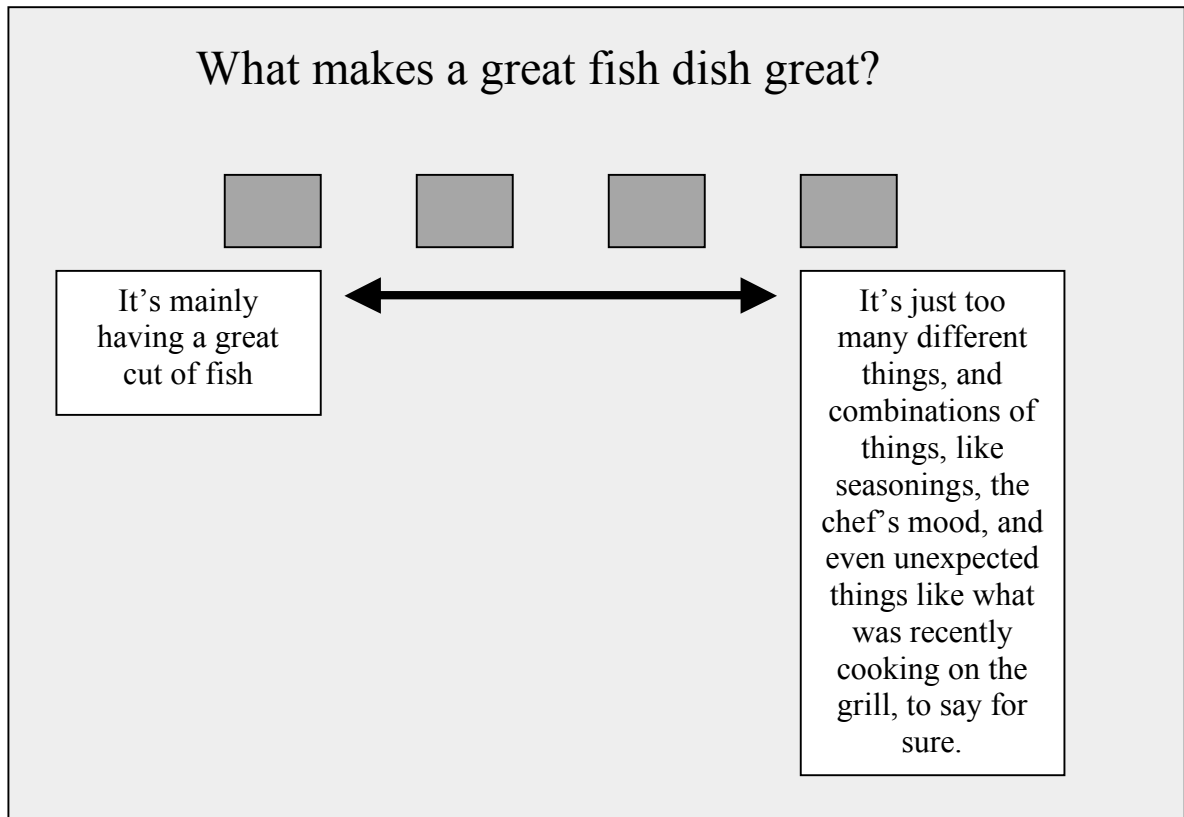
The measure I created consisted of four questions. Each question asked for an explanation of some given outcome. In response, two explanations at opposite ends of a four-point scale were offered. The response on the left extreme was simple and direct; the response on the right extreme was diffuse and complex, and contained some uncertainty. One of the actual items is shown in figure 8.1.

In addition to the "fish dish" item shown in the figure, an item asked, "What makes a great musician great?" The left-extreme response was "talent plus practice," while the right-most response was "So many things…early exposure, life experience, finding the right teacher, and the unique and fortuitous swirling together of all this stuff—or, sometimes, none of it! It's unclear exactly *what* makes a great musician great."

A third item asked, "Why do people listen to the music they listen to?" The straightforward answer was "Mainly because it makes them feel good." The less obvious answer was, "It's a deep mystery why people like music, and it's impossible to say why any one person would listen to one thing or another."

The fourth item asked, "Why might it be a good idea for kids to do their homework every night?" The straightforward answer was "It prepares them for success." The nonobvious answer was, "The reasons why are complicated, running from self-esteem to the meditative effects of quiet time, and more…and anyway, maybe it's good to skip homework sometimes."

Figure 8.1. Measuring "deliberative complexity"

What makes a great fish dish great?

It's mainly having a great cut of fish ⟷ It's just too many different things, and combinations of things, like seasonings, the chef's mood, and even unexpected things like what was recently cooking on the grill, to say for sure.

The four items were asked consecutively in the survey, but their order was randomized. It is a possible methodological flaw that the simple answer always appeared on the left and the complex on the right. There could be a general tendency for some kinds of people to choose the first or leftmost answer. Also this aspect of the item. combined with the fact that they were asked consecutively, might have amplified the tendency of subjects to choose the same kinds of answers on the second through the fourth items they saw as they chose on the first.

I accepted these weaknesses because I felt the items were likely to be difficult. They were sufficiently odd and unlike anything survey participants are likely to have seen that I did not want subjects, having read the lengthy instructions for the series, to confront surprising innovations as each next item arose (such as a reversal, with the simple answer now on the right). And I did not distribute the items throughout the survey because I wished to relieve subjects of having to remember the instructions.

In fact, the instructions made it clear that the leftmost response would always contain a "single, main, powerful reason why," and that the rightmost response would "indicate that the reason is not so clear," and that I was testing for the extent to which they saw the "reason why" as straightforward. "Ask yourself," the instructions read, "Does this main reason on the left of the scale really seem to sum it up? Or does the expression of a less straightforward reason on the right describe the way it looks to you? It could also be in between, meaning that the reason why is somewhat the main one given, but also somewhat complicated or unclear."

Because the measure was originally based on a reading of Tetlock, I first called it "integrative complexity." However, this drew a criticism from a reviewer of a manuscript which made use of the measure. The criticism was that the measure captures the first but not the second of the two concepts that make up integrative complexity (IC). Hence, the measure was not IC, and therefore could not be used.

I would respond that, first, I *do* think the measure, tilted as it may be toward concept 1 of IC, captures a bit of concept 2 as well: in the longer-winded descriptions of thinking on the right side of the frames, there is a discernible note of a sophisticated and even mysterious combining and integrating of the various considerations at hand. But even if we concede that this measure is not IC itself, we cannot claim it is nothing or that it can be safely ignored: the items intercorrelate fairly well and predict other variables, psychological and political alike. So I have renamed the variable so that it may have its day in the sun.

It deserves as much because, among measures that are convincingly apolitical, this measure is possibly the strongest predictor of political opinions that I've encountered. Even setting aside its theoretical function here as a mediator between categorization and ideology, it deserves more study, and further scale development, beyond these pages. The measure, after all, consists of only four items. And two of them have music as their subject matter, leaving it open to criticisms that it is largely a measure of people's deliberative complexity *when thinking about music*. I had not considered this rather obvious, if minor, problem while gathering data, but the measure should eventually be expanded to cover many aspects of human living.

It also deserves more attention because it's closer to being a *performance on a task* rather than a self-report of a remembered private experience. It more directly measures behavior rather than relying on the subject himself as a go-between observer. There remains a possibility that people, in responding to trait questions such as those in the Openness scale, ask themselves, "in describing myself, what kind of person do I want to appear to be?" rather than "what kind of person am I?" While we can probably rule out the idea that conservative or liberal subjects rate themselves as less or more open because they "want to look like good conservatives or liberals" on grounds that the trait measures of Openness generally correlate more strongly with opinions than with ideological self-identification, it is still likely that in response to self-description questions, people are incorporating an idealized or caricatured version of themselves into their answers. This is much less likely when we are simply asking people to indicate what about some external situation seems the most plausible.

There was another measure I designed with the intent of measuring cognitive style more directly than trait measurements do. This measure, which I call "attributionism" is conceptually related to deliberative complexity but is specifically designed to measure individual differences in understanding and explaining people's behaviors via simplistic trait attributions as opposed to relying on more complex situational explanations. This amounts largely to a measure of the tendency to commit the fundamental attribution error (FAE; Ross, 1977; Jones and Nisbett 1972; Ross and Nisbett 1991). C-theory suggests that situational explanations for behavior should come more naturally for weak categorizers. When individuals are understood according to trait labels, in fact, they are essentially understood in terms of a category to which they belong for the perceiver. If categories are fuzzy, this kind of thinking would be less useful for understanding what people do.

In fact, evidence exists that explaining poverty via simple trait attributions is more common for conservatives than for liberals (Zucker and Weiner 1993). But this could easily be a posterior result of ideology rather than a measure of cognitive style. Here, I attempt to determine whether conservatives make trait attributions for behavior, not just poverty, generally.

To measure "attributionism," five short vignettes described: a man whose magazine was successful; a clerk at Starbucks who was rude to a customer; a man who was late on his rent; a young woman who helped an elderly man carry his groceries to his apartment; and a woman who forgot to meet with someone with whom she'd made an appointment. On 4-point scales, participants expressed whether these behaviors likely resulted from the characters' being, respectively, "a smart, hard-working person," "a rude person," "an irresponsible person," "a generous person," and "a forgetful person" or, instead, were the results of more complicated situations, which were described on the other end of the scale.[1] The two more central scale-points allowed participants to indicate that the explanation for the behavior was mostly a trait, but somewhat situational, or mostly situational, but somewhat the trait. These scales were administered to relatively small subsets of the second student sample and the Tallahassee sample, so while there is a good deal of data on deliberative complexity here, we can regard the data on attributionism to be of a "pilot-study" nature.

I turn now to results, beginning with student sample 2. Crohnbach's α for the four deliberative complexity items is 0.50—not great. However, I checked to see whether the correlation between the deliberative complexity scale and ideology might have been driven by just one or two of the items, and it's not the case: rather, all four items correlate in the right direction with all ideology measures, so it seems

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[1] For example, the "situational" explanation for "Lloyd has gone 2 months now without paying his rent" is "Lloyd has encountered a mixture of unfortunate setbacks, such as job loss, medical bills and so forth" as opposed to being an "irresponsible person." The "situational" explanation for "Jessica helps an elderly man, whom she has never met, carry his groceries up to his apartment" is "Jessica has been taught to be helpful, has observed others in her culture doing it, senses that others will think well of her, and it's also likely the man asked for help."

appropriate to include all four items in the scale. The "fish dish" item did scale less well than the other three—alpha improves very, very slightly when it's dropped—so I report correlations using both a four-item and a three-item, fish-dish-less DC scale. Table 8.1 reports ideology-DC correlations, along with already-reported ideology-trait measures, and trait-DC measures, for student sample 2.

Table 8.1. Intercorrelations of Deliberative Complexity (DC) with ideology and trait measures, student sample 2

	DC	Fiscal id.	T-t id.	Moral id.	Openness	A.I.
DC	1					
Fiscal ideology	-0.31 (0.0001)	1				
Tough-tender ideology	-0.27 (0.0008)	0.59 (0.000)	1			
Moral ideology	-0.20 (0.008)	0.24 (0.001)	0.29 (0.0000)	1		
Big-5 Openness	0.097 (0.13)	-0.26 (0.0003)	-0.34 (0.0000)	-0.23 (0.0014)	1	
Ambiguity intolerance	-0.34 (0.0002)	0.31 (0.001)	0.41 (0.0000)	0.30 (0.001)	-0.44 (0.0000)	1

One-tailed p – values in parentheses. N for AI correlations: 100; N for DC with ideology: 134; N for ideology with ideology: 167.

More deliberative complexity is certainly associated with liberalism of all three dimensions, and, correlationally, is the best predictor of fiscal ideology of any of the psychological variables in student sample 2, just barely edging out Ambiguity Intolerance. And it is also clearly related to Openness and AI. But it is not just an alternate measure of those traits. If we regress fiscal, tough-tender and moral ideology on DC and control for Openness and Ambiguity Intolerance, integrative complexity survives the controls, remaining nearly significant in predicting tough-tender and moral ideology, and is fully significant and the strongest predictor of fiscal ideology, as shown in tables 8.2 - 8.4. These are tough controls to survive, as they are well established scales which measure phenomena that are clearly members of the family of cognitive-rigidity measures and, especially in the case of AI, carry a whiff of ideology already. DC appears to make its own, independent contribution to ideology.

Table 8.2. Deliberative complexity as independent determinant of fiscal ideology. Student sample 2, OLS coefficients.

Dependent variable: fiscal ideology, standardized		
Independent variable	Coefficient	$p-$value
Deliberative complexity, standardized	-0.29 (0.11)	0.005
Big-5 Openness, standardized	-0.22 (0.11)	0.024
Ambiguity Intolerance, standardized	0.14 (0.12)	0.115
Sex (0=M, 1=F)	-0.32 (0.20)	0.128
Race (0 = nonblack, 1 = black)	-0.30 (0.43)	0.493
Constant	0.26 (0.14)	0.064
N = 98, R^2 = 0.21		

Significance tests one-tailed for DC, Openness, AI; otherwise two-tailed. All psychological variables standardized.

Additionally, DC does not predict any dimension of ideology only *via* another. That is, it's not related to social or tough-tender ideology only as a side-effect of its relationship to fiscal ideology. This is demonstrated by regressing moral and tough-tender ideology on DC and controlling for self-identified fiscal ideology, as in table 8.5. DC mostly survives the control each time, although just barely when explaining moral ideology. (Nonetheless, a Sobel test for mediation is not significant for moral ideology; it's significant for tough-tender ideology, which is no surprise since tough-tender and fiscal ideology are so closely related as ideological dimensions). Not shown, controlling for moral ideology also leaves the coefficient for DC significant when explaining tough-tender or fiscal ideology.

More significantly for our purposes, however, deliberative complexity is, in zero-order correlations, strongly related to categorization strength while the traitlike measures are much more weakly related, as shown in table 8.7. This suggests, then, that if categorization strength affects ideology *through* a psychological or cognitive mediating variable, DC and not Openness or Ambiguity Intolerance is the superior candidate variable.

**Table 8.3. DC as independent determinant of tough-tender ideology.
Student sample 2, OLS coefficients.**

Dependent variable: tough-tender ideology, standardized		
Independent variable	Coefficient	p – value
Deliberative complexity (standardized)	-0.13 (0.105)	0.109
Big-5 Openness (standardized)	-0.225 (0.10)	0.015
Ambiguity Intolerance (standardized)	0.27 (0.11)	0.009
Sex (0=M, 1=F)	-0.32 (0.19)	0.105
Race (0 = nonblack, 1 = black)	0.53 (0.41)	0.207
Constant	0.14 (0.13)	0.284
N = 98, R^2 = 0.245		

Significance tests one-tailed for DC, Openness, AI; otherwise two-tailed. All psychological variables standardized.

Indeed a simple structural equation model can be constructed in M-Plus as illustrated in figure 8.2, which fits the data well, CFI= 0.956, RMSEA = 0.48. In this model, categorization strength—in this case, categorization$_{tough-tender}$, the measure constructed from category sets which correlated most strongly with the tough-tender dimension of ideology—has a significant effect on deliberative complexity, which in turn has a significant effect on fiscal ideology. Direct effects of categorization on fiscal ideology are not in the model because they were nonsignificant and slightly worsened the fit.

And figure 8.3 shows a similar model predicting tough-tender ideology, again with significant effects connecting Categorization Strength through DC to tough-tender ideology. This model fits the data at slightly less than optimal levels (CFI = 0.923, RMSEA = 0.049), raising the spectre of mild misspecification. This suboptimal fit is most likely because tough-tender ideology is the most highly correlated with psychological variables of the ideological dimensions, and fit can be more difficult to achieve when many variables in a model are correlated (*i.e.,* when they are more difficult to render as distinct variables measuring distinct concepts). This might be thought of as suggesting that, to a certain extent, tough-tender ideology is itself a measure of deliberative complexity.

**Table 8.4. DC as independent determinant of moral ideology.
Student sample 2, OLS coefficients.**

Dependent variable: moral ideology, standardized		
Independent variable	Coefficient	$p-$ value
Deliberative complexity (standardized)	-0.12 (0.104)	0.125
Big-5 Openness (standardized)	-0.09 (0.10)	0.177
Ambiguity Intolerance (standardized)	0.18 (0.11)	0.053
Sex (0=M, 1=F)	-0.18 (0.19)	0.340
Race (0 = nonblack, 1 = black)	0.09 (0.41)	0.819
Religious attendance (0 to 1)	0.96 (0.31)	0.001
Constant	-0.31 (0.18)	0.102

N = 98, R^2 = 0.21

Significance tests one-tailed for DC, self-ID'd ideology, religious attendance; otherwise two-tailed. All psychological variables standardized.

According to the coefficients in the model, in predicting tough-tender ideology some of the effect of integrative complexity on ideology is mediated through Openness—which I have argued is a theoretically poor choice as a causal variable. If we may stretch our interpretation here, we might imagine that DC not only causes tender-minded liberalism directly via a kind of "outsiders should not be treated like insiders" logic, but is associated with a self-image as open-minded or as holding universalist values (which, alas, are not measured in this sample), which in turn is more easily associated with anti-death-penalty or pro-foreigner (pro-immigrant) positions than with more abstractly philosophical fiscally liberal positions. That is, perhaps there's a "Universalist self-perception" effect that Openness is capturing. (And if this is the case, maybe I've been too hard on Openness as an explanatory variable in order to make a point.)

Table 8.5. DC does not determine tough-tender ideology only via self-identified fiscal ideology. Student sample 2, OLS coefficients.

Dependent variable: tough-tender ideology, standardized		
Independent variable	Coefficient	p – value
Deliberative complexity	-0.16 (0.09)	0.035
Self-identified fiscal ideology (0 to 1)	1.24 (0.30)	0.0000
Sex (0=M, 1=F)	-0.28 (0.16)	0.09
Race (0 = nonblack, 1 = black)	0.59 (0.40)	0.138
Constant	-0.41 (0.18)	0.02
N = 98, R^2 = 0.21		

Significance tests one-tailed for DC, self-ID'd ideology; otherwise two-tailed. All psychological variables standardized.

Table 8.6. DC does not determine moral ideology only via self-identified fiscal ideology. Student sample 2, OLS coefficients.

| Dependent variable: moral ideology, standardized		
Independent variable	Coefficient	p – value
Deliberative complexity	-0.11 (0.086)	0.106
Self-identified fiscal ideology (0 to 1)	-0.41 (0.29)	0.008
Sex (0=M, 1=F)	-0.19 (0.16)	0.218
Race (0 = nonblack, 1 = black)	0.17 (0.39)	0.653
Religious attendance (0 to 1)	1.10 (0.31)	0.000
Constant	-0.55 (0.19)	0.005
N = 98, R^2 = 0.17		

Significance tests one-tailed for DC, Openness, AI, religious attendance; otherwise two-tailed. All psychological variables standardized.

Table 8.7. Correlations of student-sample-2 categorization measures with psychological variables

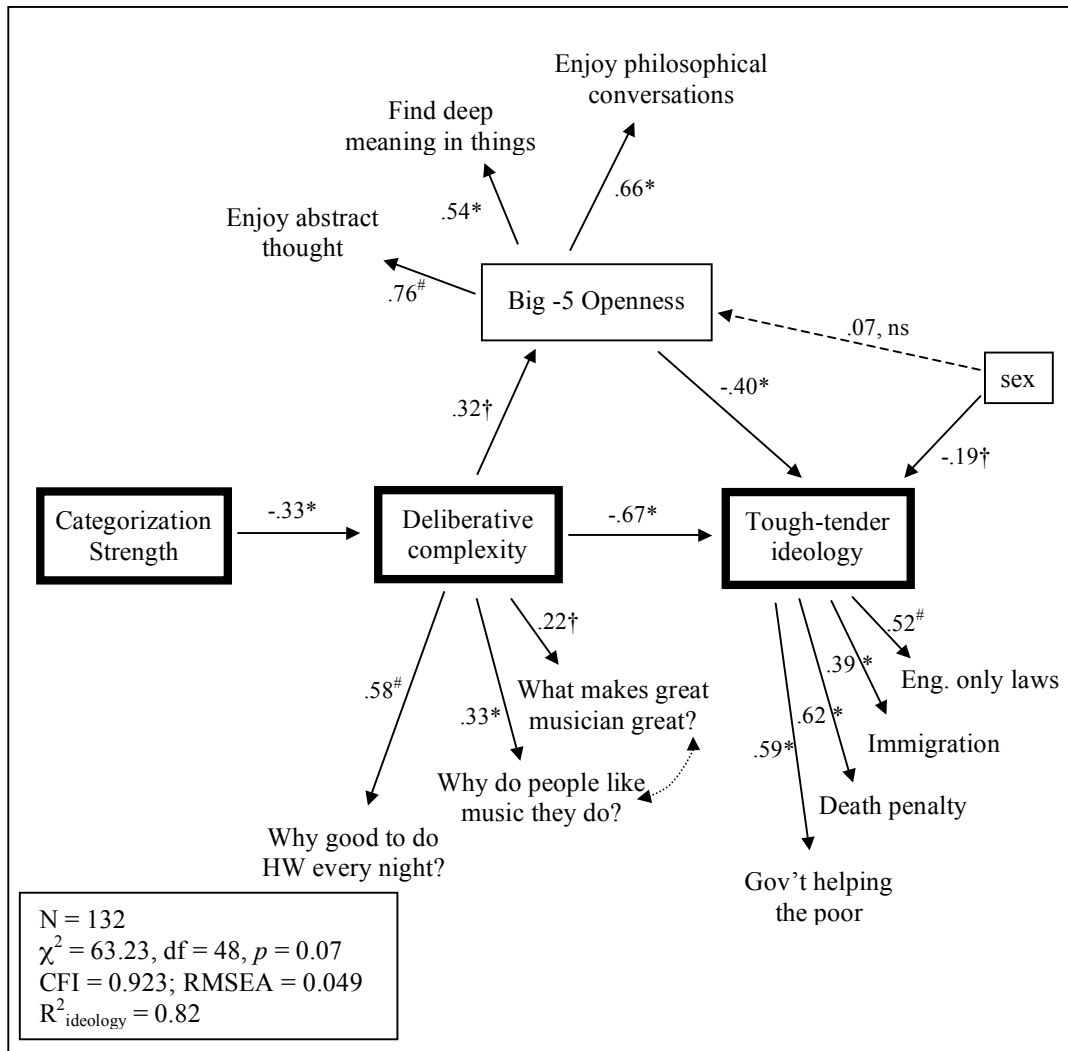| Psychological variable	Corr. with Cat-strength$_{general}1$	Corr. with Cat-strength$_{general}2$	Corr. with Cat-strength$_{tough-tender}$
Deliberative complexity (N = 134)	-0.27 (0.0007)	-0.24 (0.0027)	-0.28 (0.0005)
Ambiguity intolerance (N = 100)	0.074 (0.23)	0.135 (0.09)	0.144 (0.076)
Big-5 Openness (N = 165)	-0.01 (0.44)	-0.03 (0.32)	-0.09 (0.12)
All significance tests one-tailed since all coefficients signed in expected direction			

Fig. 8.2. Structural equation model, fiscal ideology. Higher values = more conservatism. Student sample 2.
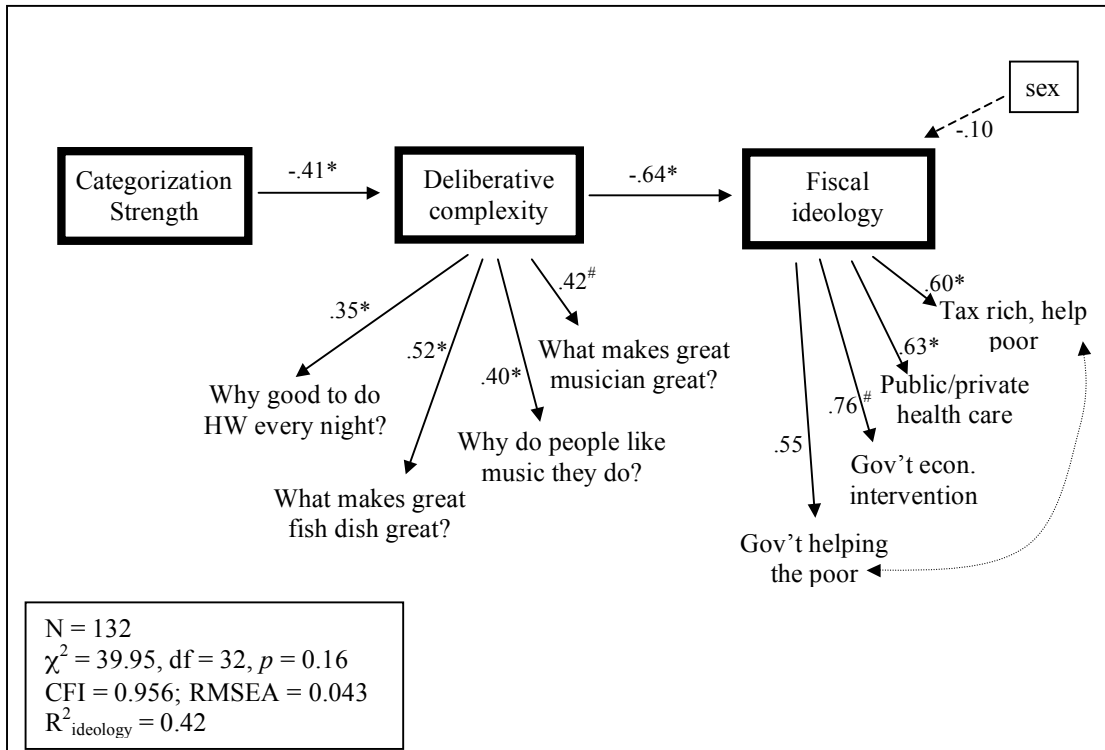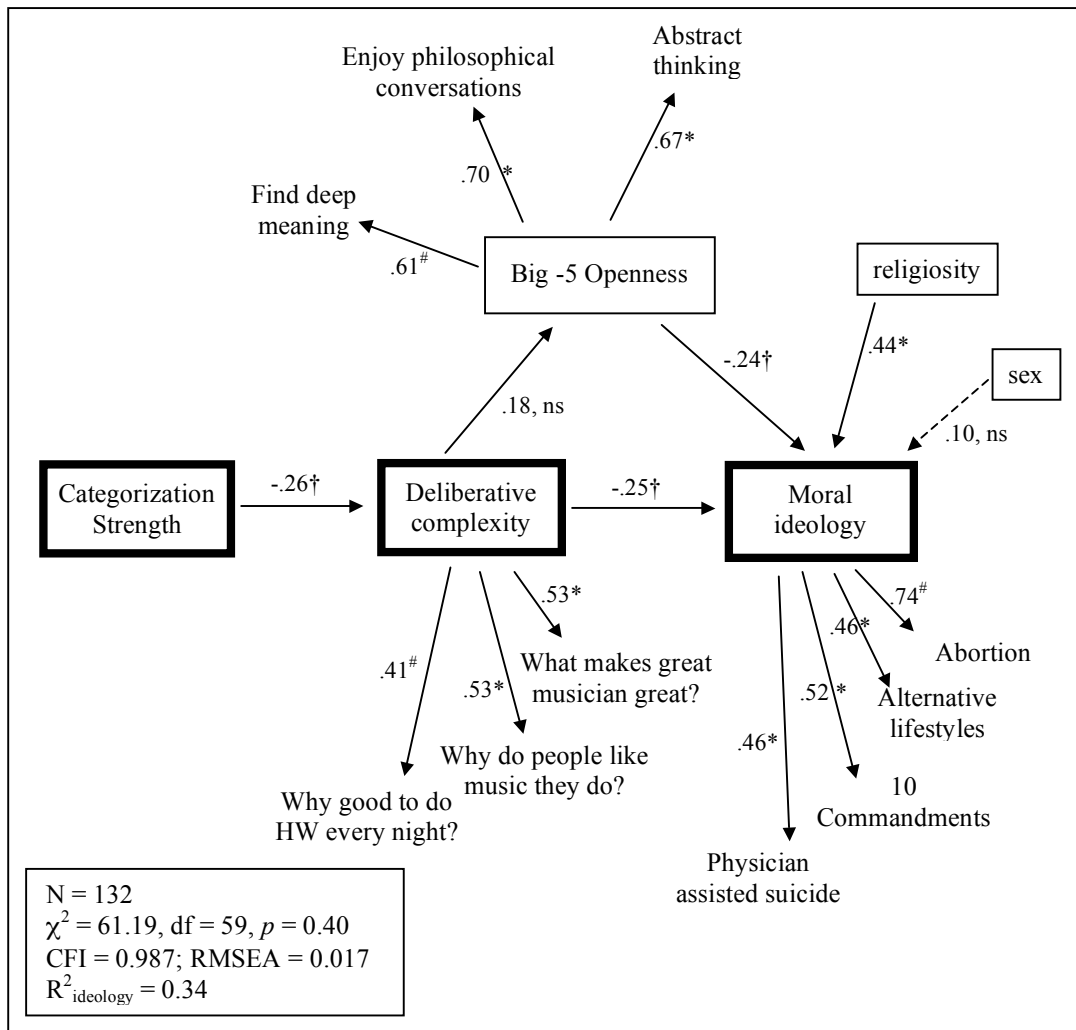

$†p < .05$, $*p < .01$, # no p value since loading fixed. *All coefficients fully standardized.*
Significance tests one-tailed except education, sex.

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Fig. 8.3. Structural equation model, tough-tender ideology. Higher values = more conservatism. Student sample 2.

Enjoy philosophical conversations

Find deep meaning in things

Enjoy abstract thought

.54*

.66*

.76#

Big -5 Openness

.07, ns

sex

-.40*

.32†

-.19†

Categorization Strength

-.33*

Deliberative complexity

-.67*

Tough-tender ideology

.52#

.39*

Eng. only laws

.22†

.58#

.33*

What makes great musician great?

.62*

Immigration

.59*

Why do people like music they do?

Death penalty

Why good to do HW every night?

Gov't helping the poor

N = 132
$\chi^2 = 63.23$, df = 48, $p = 0.07$
CFI = 0.923; RMSEA = 0.049
$R^2_{ideology} = 0.82$

†$p < .05$, *$p < .01$, # no p value since loading fixed. *All coefficients fully standardized.* Significance tests one-tailed except sex.

Figure 8.4. Structural equation model, moral ideology. Higher values=more conservatism. Student sample 2.

Big -5 Openness
- Enjoy philosophical conversations .70*
- Abstract thinking .67*
- Find deep meaning .61#

Categorization Strength → Deliberative complexity: -.26†

Deliberative complexity:
- Big -5 Openness .18, ns
- Moral ideology -.25†
- What makes great musician great? .53*
- Why do people like music they do? .53*
- Why good to do HW every night? .41#

Big -5 Openness → Moral ideology: -.24†

religiosity → Moral ideology: .44*

sex ⤏ Moral ideology: .10, ns

Moral ideology:
- Abortion .74#
- Alternative lifestyles .46*
- 10 Commandments .52*
- Physician assisted suicide .46*

N = 132
$\chi^2 = 61.19$, df = 59, $p = 0.40$
CFI = 0.987; RMSEA = 0.017
$R^2_{ideology} = 0.34$

†$p < .06$, *$p < .01$, # no p value since loading fixed. *All coefficients fully standardized.*
Significance tests one-tailed except education, religion, sex.

Finally, figure 8.4 shows a very good-fitting model of moral ideology, indicating pathways by which, through DC, categorization strength may after all help push people toward more conservative positions. These coefficients are generally smaller than with the other dimensions, and only borderline significant; however, note that religious attendance is controlled for here, and this variable soaks up a great deal of variance. It does appear that the conventional wisdom holding that a cognitive rigidity-generating mechanism produces moral conservatism is supported—although, it must be conceded yet again, supported less strongly than the conventionally *rejected* idea that cognitive rigidity lies behind other, *non*-moral forms of conservatism.

It is important to note that structural equation models do not establish a causal order. The fact that the fit is acceptable and coefficients are significant does not rule out competing models with other causal orders. And when the different variables are mutually intercorrelated as they are here, good-fitting models with alternate causal orders are easy to find—and that is the case here. A model in which deliberative complexity causes categorization strength, rather than the other way around, and in which *both* variables are modeled as causes of fiscal ideology, fits the data acceptably also, CFI= 0.95 (with DC significantly causing ideology, and categorization nonsignificant). The question of causality rests mainly on theory here—categorization strength is conceptualized as an early cognitive process likely to cause deliberative complexity. Additionally, we have the result mentioned in a previous chapter that, in the Tallahassee sample, education had stronger effects on ambiguity intolerance and Openness than on categorization. In fact, education has no effect whatsoever on DC in Tallahassee, r = -0.02, indicating that it too is probably causally prior to the more traitlike psychological variables, exactly as it was designed to be.[2]

Beyond theory and this latter result, only an experiment designed to manipulate categorization strength can empirically establish a causal order—and this experiment was attempted and will be described in chapter 10. I do not mind revealing now that the experiment yielded interesting results, but did not establish conclusively that categorization strength is causally prior (or posterior) either to ideology or to DC. That question remains for future research.

It is precisely because causality rests entirely on theory that I wish to be careful not to overstate the role of perceptual categorization as an *original* cause of ideology. Rather, I believe it is safer to describe categorization as part of a constellation of variables which together form a cognitive-flexibility-and-rigidity phenomenon, and to recognize that perceptual categorization strength is extremely cognitively basic and about as pure and ideologically uncontaminated a cognitive-process variable, as any psychological independent variable has ever been in ideology research. I think a similar case can be made for DC, although it's less abstract. But the same simply cannot be said for Openness or Ambiguity Intolerance, which, like ideology, measure attitudes.

Tallahassee sample

I turn now to the performance of DC in the Tallahassee adult sample. In this sample, the four DC items scaled together a bit better, with the "fish dish" item again slightly lowering alpha such that the overall DC measure has $\alpha = 0.61$, and without the fish dish question, $\alpha = 0.66$. Correlations between ideological dimensions and

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[2] The astute reader will note that education appears to have more of an effect on categorization than on DC, and while nonsignificant, this weakly suggests the possibility that DC *is* somehow more basic than C-strength. I won't push this point further, though, based on a nonsignificant difference. I mention it only to be thorough.

DC, along with openness and ambiguity intolerance, are shown in table 8.8. Deliberative complexity is clearly related to ideology—this time, most strongly to the tough-tender dimension and next to the fiscal dimension. Note that it is also, and about as strongly, correlated with measures of ideological self-identification, a uniquely Tallahassean fact also for several other psychological variables.

It is striking also how strongly ambiguity intolerance (AI) dominates other variables in the potential to explain ideology. Partly this is because the subsample that took the AI series evinced an especially strong relationship between rigidity and ideology—the correlation between DC and tough-tender ideology jumps to 0.47 for this group.[3]

Nonetheless, when Ambiguity Intolerance is included as a control in a regression predicting tough-tender ideology[4], deliberative complexity exerts its own significant and strong effect on ideology, as shown in the regression of table 8.9.

The same control in a regression explaining fiscal ideology (not shown) also leaves the significance of DC intact, and in this case DC is a marginally stronger predictor than AI. However, in a regression explaining moral ideology, the presence of ambiguity intolerance reduces the already small effect of DC to near zero (not shown). It would seem, then, that AI is related to, but not the same thing as, deliberative complexity for the Tallahassee sample, and is related to moral ideology in a way deliberative complexity is not.

In a contrast with the Stony Brook sample, DC does not survive controls for self-identified ideology when explaining issue-based fiscal or moral ideology. Explaining tough-tender ideology, however, DC is still strongly significant. These results are shown in tables 8.10 through 8.12.

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[3] Note also the nonsignificant and incorrectly signed correlation between self-identified fiscal ideology and Big-Five Openness (grayed cell). This kind of result, which probably reflects the social desirability in certain subpopulations of proclaiming oneself fiscally conservative ("prudent"?), convinces political psychologists that Openness-type measures are unrelated to fiscal ideology. But if anything, this table shows what poor measures both Openness *and* self-identification are in this kind of research—for note that other measures of cognitive flexibility, such as AI and DC, *very strongly* predict fiscal ideology, and even Openness does so when we measure it by issue positions rather than self-description. So much for the conventional wisdom!

[4] In this case, because DC is conceptualized as a result of categorization, I "scrubbed" the ambiguity intolerance measure of two questions which struck me as too closely related to other variables in the analysis. One was very close to ideology itself, *especially* moral ideology: "There is a right and a wrong way to do almost everything"; and the other was "An expert who doesn't come up with a definite answer probably doesn't know too much," which strikes me as very nearly an endorsement of deliberative complexity, or at least of its outputs. The scrubbed AI measure correlates with the original measure at 0.94.

Table 8.8. Intercorrelations of Deliberative Complexity (DC) with ideology and trait measures, Tallahassee adult sample

	DC	Fiscal id.	T-t id.	Moral id.	Openness	A.I.
DC	1					
Fiscal ideology, issue positions	-0.20 (0.018)	1				
Tough-tender ideology, issue positions	-0.39 (0.000)	0.68 (0.000)	1			
Moral ideology, issue positions	-0.13 (0.09)	0.623 (0.000)	0.58 (0.000)	1		
Big-5 Openness	0.21 (0.014)	-0.03 (0.037)	-0.24 (0.005)	-0.12 (0.11)	1	
Ambiguity intolerance	-0.46 (0.0002)	0.34 (0.005)	0.61 (0.000)	0.29 (0.016)	-0.42 (0.0007)	1
Gen. lib-con, self-ID	-0.32 (0.0003)	0.69 (0.000)	0.58 (0.000)	0.76 (0.000)	-0.13 (0.09)	0.39 (0.002)
Fiscal lib-con, self-ID	-0.25 (0.003)	0.66 (0.000)	0.47 (0.000)	0.50 (0.000)	0.02 (0.80)	0.23 (0.047)
Social lib-con, self-ID	-0.23 (0.008)	0.57 (0.000)	0.53 (0.000)	0.86 (0.000)	-0.12 (0.10)	0.39 (0.002)

One-tailed *p* - values in parentheses except gray cell, two-tailed because sign in unexpected direction. N = 112 except Ambiguity intolerance, N = 55 and general liberalism-conservatism, N=109.

Why is DC nonsignificant (and tiny) in the other regressions? Is it only affecting ideology as mediated by self-identification? Probably not. Rather, this is probably an artifact of the fact that correlations between self-identified ideology and ideological opinion formation are stunningly high in the Tallahassee sample: the correlation between self-identified fiscal ideology and issue-driven fiscal ideology is 0.66, and the correlation between self-identified "social" ideology and issue-driven moral ideology is a stunning 0.86, meaning including self-identification in a regression explaining issue positions leaves a paltry quarter of the variance to be explained. In Tallahassee, largely because of the high education of the sample, and also because, perhaps, the South is an ideologically charged place, we are cursed with high levels of collinearity between different measures of ideology. In such an atmosphere, it is

inappropriate to use one measure of ideology as a control in explaining another. Endogeneity is introduced with near certainty in heaping amounts.

Whereas deliberative complexity was the only psychological variable among itself, Openness and Ambiguity Intolerance to be significantly correlated with categorization strength in the Stony Brook sample, all three variables are correlated with categorization strength here, and at generally similar strengths, as shown in table 8.13.

Table 8.9. Determinants of tough-tender ideology, Tallahassee sample. OLS coefficients.

Dependent variable: Tough-tender ideology, standardized		
Independent variable	Coefficient (standard error)	$p-$ value
Deliberative complexity (standardized)	-0.28 (0.115)	0.01
Ambiguity Intolerance (standardized)	0.475 (0.12)	0.000
Sex (0=M, 1=F)	-0.09 (0.22)	0.68
Education (0 -1)	0.35 (0.50)	0.49
Age (years)	-0.002 (0.007)	0.79
Race (0 = nonblack, 1 = black)	-0.41 (0.42)	0.33
Constant	-0.18 (0.29)	0.545
N = 55, R^2 = 0.43		

Significance tests one-tailed for psychological variables, otherwise two-tailed

Table 8.10. Predicting issue-position-based fiscal ideology with DC and self-identified fiscal ideology, Tallahassee sample. OLS coefficients.

Dependent variable: Fiscal ideology, standardized		
Independent variable	Coefficient (standard error)	p – value
Deliberative complexity (standardized)	-0.06 (0.072)	0.21
Fiscal ideology, self-identified (0 to 1)	2.32 (0.25)	0.000
Age (years)	-0.015 (0.004)	0.002
Constant	-0.83 (0.24)	0.001

N = 113, R^2 = 0.49

Significance tests one-tailed for DC and fiscal ideology, otherwise two-tailed. Controls included in regression but not approaching significance and not shown here: sex, race, education

Table 8.11. Predicting issue-position-based moral ideology with DC and self-identified moral ideology, Tallahassee sample. OLS coefficients.

Dependent variable: moral ideology, standardized		
Independent variable	Coefficient (standard error)	p – value
Deliberative complexity (standardized)	0.07 (0.05)	0.16
moral ideology, self-identified (0 to 1)	2.39 (0.14)	0.000
Sex (0=M, 1=F)	0.14 (0.10)	0.17
Education (0 -1)	-0.40 (0.20)	0.054

N = 110, R^2 = 0.76

All significance tests two-tailed. Included in regression but not shown and not significant: race, age, constant.

Table 8.12. Predicting issue-position-based tough-tender ideology with DC and self-identified fiscal ideology, Tallahassee sample. OLS coefficients.

Dependent variable: tough-tender ideology, standardized		
Independent variable	Coefficient (standard error)	p – value
Deliberative complexity (standardized)	-0.21 (0.078)	0.004
General ideology, self-identified (0 to 1)	0.80 (0.58)	0.088
Fiscal ideology, self-identified (0 to 1)	0.73 (0.38)	0.029
Moral ideology, self-identified (0 to 1)	0.42 (0.40)	0.146
Education (0 -1)	-0.75 (0.31)	0.02
Race (0 = nonblack, 1 = black)	-0.08 (0.045)	0.59

N = 07, R^2 = 0.46

Significance tests one-tailed for DC and ideology variables, otherwise two-tailed. Included in regression but not shown and not significant: age, sex, constant.

Table 8.13. Intercorrelations of deliberative complexity with categorization and other psychological measures in Tallahassee adult sample

	Deliberative Complexity	Catstrength, general	Catstrength, subsamples	Big-5 Openness	Ambiguity Intolerance
Deliberative Complexity	1				
Catstrength, general	-0.19 (0.018)	1			
Catstrength, Subsamples	-0.29 (0.0008)	0.62 (0.0000)	1		
Big-5 Openness	0.20 (0.014)	-0.24 (0.005)	-0.29 (0.001)	1	
Ambiguity Intolerance	-0.38 (0.0024)	0.11 (0.20)	0.31 (0.011)	-0.44 (0.0005)	1

Significance tests one-tailed. N = 113 except N = 55 in bottom row.

Once again, then, it would appear that we can construct structural equation models in which DC mediates between categorization and ideology for the Tallahassee sample, and indeed it is. Figure 8.5 shows the results of a model explaining tough-tender ideology. Conscientiousness is included here as a covariate in the final stage of the model, explaining tough-tender ideology, along with sex, education and age. The fit is good, CFI = 0.976 and RMSEA = 0.028. The coefficients indicate a significant pathway from Categorization Strength to tough-minded ideology via deliberative complexity:

**Fig. 8.5. Structural equation model, Tough-tender ideology. Higher values = more conservatism. Tallahassee adult sample.**
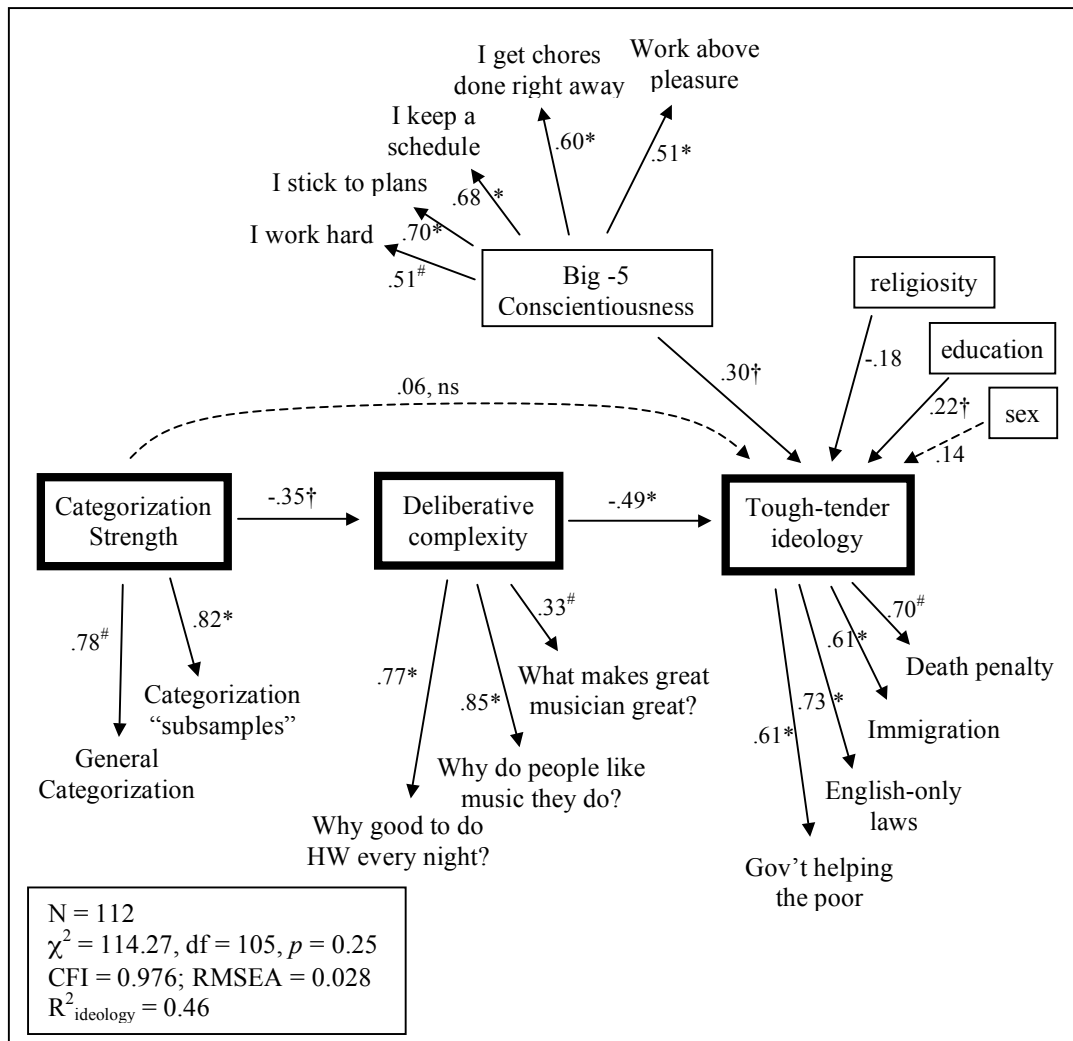
†$p < .05$, *$p < .01$, # no p value since loading fixed. *All coefficients fully standardized.*
Significance tests one-tailed except education, religion, sex.

Categorization Strength has a significant and negative effect on deliberative complexity such that a standard deviation increase in categorization predicts a 0.35-standard deviation *decrease* in deliberative complexity. In turn, deliberative complexity is negatively related to tough-minded conservatism such that a 1 standard-deviation increase in DC "causes" nearly a one-half standard-deviation decrease in conservatism. The direct pathway between deliberative complexity and tough-minded ideology was modeled but was nonsignificant, suggesting that most of the effect of categorization is mediated—however, the coefficient of 0.06 is in the right direction. The total mediated plus direct effect of categorization on ideology yields a prediction that a 1 standard-deviation increase in categorization strength is associated with a 0.22 standard-deviation increase in conservatism. This is not a tiny amount, especially when we consider that categorization strength is so difficult to measure, and that our measure of it is probably truncated such that strong and moderate categorizers cannot be easily distinguished, as previously discussed.

Fig. 8.6. Structural equation model, fiscal ideology. Higher values = more conservatism.
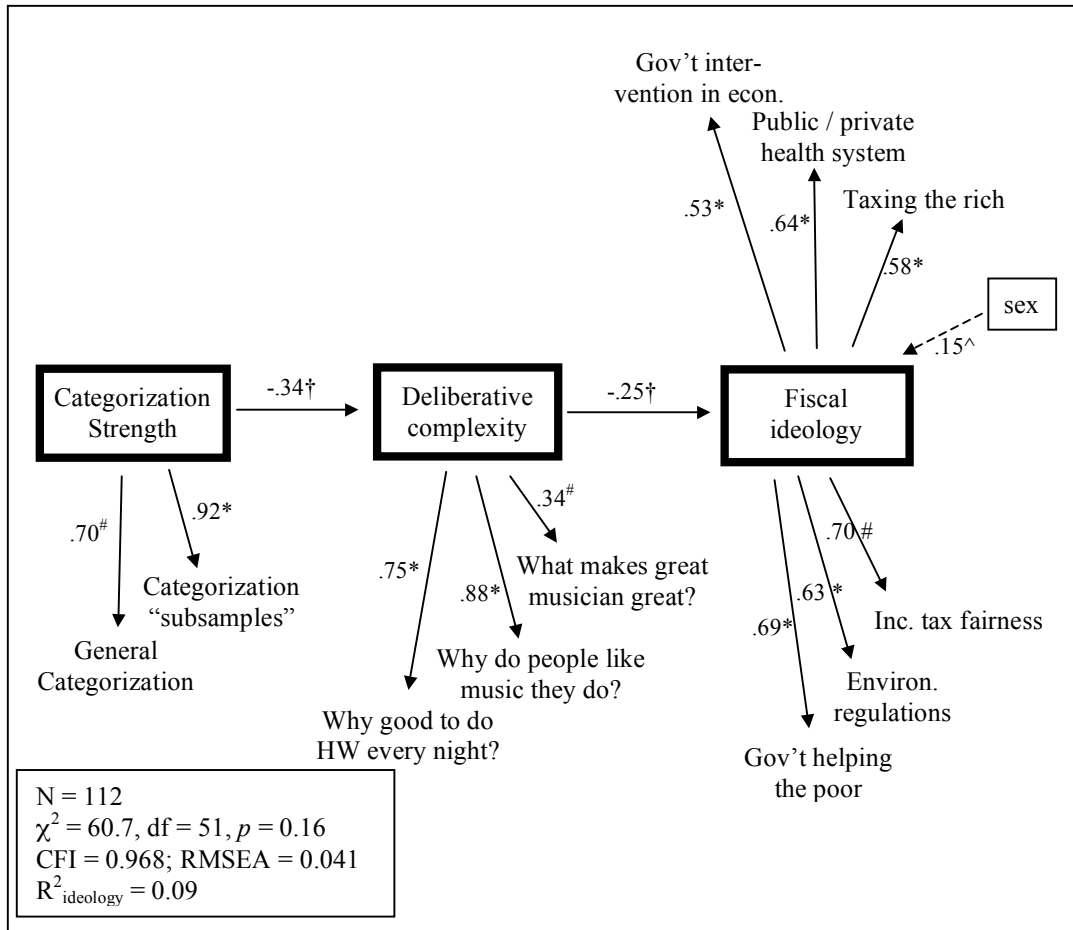
$\dagger p < .05$, $*p < .01$, $\wedge p < 0.10$, # no p value since loading fixed. *All coefficients fully standardized.* Significance tests one-tailed except for sex.

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Figure 8.6 shows a structural equation model linking categorization to fiscal ideology. Fiscal ideology is not well explained in this model, with only 9% of its variance accounted for. However, again there is a significant unbroken pathway between categorization strength and fiscal ideology.

I wonder whether "Conversian" defenders of a pure learning model of ideology (especially fiscal ideology) might focus on the small amount of variance explained. Especially significant, they might say, is that the most cognitively basic variable in the model, C-strength, is not especially strongly related to fiscal ideology (a one s.d. increase in Categorization Strength predicts a 0.08-s.d. increase in fiscal conservatism). Based on this, should we not dismiss the overall cognitive rigidity/flexibility phenomenon, of which categorization is a part, as a substantively irrelevant cause of fiscally conservative and liberal thinking? I think it's more likely that the one-tenth of the variance accounted for here may well be sufficient, given how cognitively basic the variables are, to virtually assure that, given a mature democratic society with time for different personalities to sort themselves into various political coalitions without immense structural barriers (such as caste systems and other institutional arrangements that may force categorical thinkers into pro-poverty political entities), roughly this constellation of fiscal issue positions will inevitably emerge as a single ideological package, that it will be led by strongly categorical political thinkers, and that it will emerge as a close relative of the broader package of positions that make up the tough-minded brand of conservatism. That is, given time for politics to sort itself out, the categorical thinkers are bound to tend toward favoring both the death penalty *and* strong personal-responsibility concepts with weak-safety-net implications. Indeed, it is likely that these very same positions will attract moral conservatives too, although the evidence here is weaker. That is, even though we have almost certainly underestimated the effect of rigidity on fiscal ideology at one-tenth of the variance, even one-tenth probably should not be ignored or thought historically insignificant. It may be plenty to assure that political coalitions that attempt to unite people with categorization-friendly attitudes and people with categorization-unfriendly attitudes should be extremely unstable.

Even for moral ideology, which has not responded especially strongly to psychological variables, there is a significant pathway from categorization strength to ideology via deliberative complexity shown in figure 8.7, such that more categorization is associated with more moral conservatism. We must note as a caveat that the model for moral ideology fits the data only moderately well by modern standards. Still, the model fits well enough that we can treat the coefficients as meaningful. Not a huge amount of variance in ideology is explained by psychology— the hefty R^2 for the final stage of the model is almost entirely due to religiosity's inclusion as a control, measured by frequency of church attendance—but the psychology still runs significantly in the right direction: more rigidity is associated with more conservatism.

Figure 8.7. Structural equation model of moral ideology. Higher values = more conservatism.
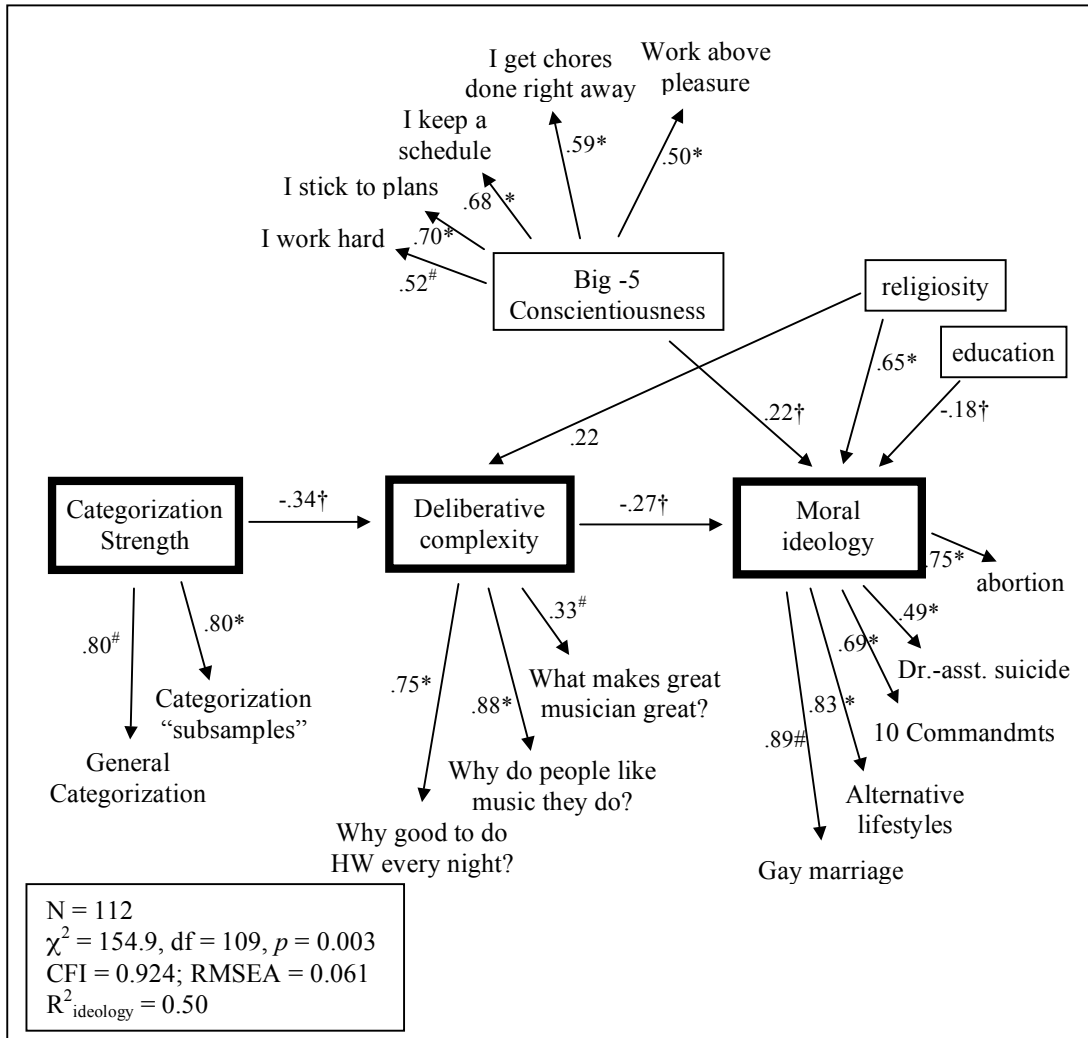
†$p < .05$, *$p < .01$, # no p value since loading fixed. *All coefficients fully standardized.*
Significance tests one-tailed except education, and religiosity→ deliberative complexity.

Curiously, religiosity, which exerts a conservative influence on moral thinking directly, shows an indirect and small *liberalizing* influence on moral ideology in that higher levels of church attendance are associated with greater levels of deliberative complexity—a result that will surprise many. This result is not strongly significant—the *t* score of 1.88 is only significant at the 0.05 level in a one-tailed test, which is not used here because the relationship was not predicted in this direction. However, I include the link in the model because I believe the result is, in fact, plausible and even intuitive (it had a negligible effect on model fit). More church attendance need not be a cognitively rigidifying experience. Even the study of Southern Protestant Christianity, whatever its reputation, may stimulate deeper, and possibly less

mechanically rigid, thinking. In fact, I suspect that this result is revealing the broad outlines of a hypothesis, certainly not adequately tested here but interesting, that being a fundamentalist religious hard-liner (as opposed to merely a regular churchgoer) is partly a *result* of cognitive rigidity, and given such a self-identification as religious, one is both likely to be morally conservative and to attend church. However, those who endeavor to *study intensively* their religion—replete with all its internal contradictions—whatever their original level of cognitive rigidity, are necessarily exposed to multiple perspectives, however literalist their denomination may attempt to be, and can thereby learn to deliberate in at least a marginally more complex manner. A verification of this hypothesis would require a specifically designed study, however.

Attributionism

I turn now to the results for attributionism, which as explained above I conceive as a theoretically sensible consequence of categorization strength that I expect to be closely related to deliberative complexity. A little discussion of the attributionism items: note that they are balanced so that they do not all ask subjects to explain a *negative* behavior via either traits or situational factors. Rather, two of the five items describe unambiguously positive outcomes: "Jessica helps an elderly man, whom she has never met, carry his groceries up to his apartment," and "The magazine Henry edits and publishes has become extremely successful." This helps insure that, in the event conservatives appear to understand behaviors more "attributionally," the result is not confounded by the possibility that conservatives simply think worse of people, while liberals chalk bad behaviors up to exculpatory factors.

For student sample two, N = 134 of the subjects, a majority subsample, answered the attributionism series, $\alpha = 0.62$, suggesting that for the most part the scale is measuring a coherent construct. The correlations of attributionism with the three dimensions of ideology are shown in table 8.14 and indicate that conservatives do explain even apolitical behavior in terms of traits more than liberals do—or, as a causal model would have it, the psychology that leads to perceptions of traits as explanatory of behavior produces conservative opinions. This is especially true of fiscal and tough-tender ideology, but is suggested with moral ideology too. Is the relationship with moral ideology driven entirely by the fact that attributionism "causes" fiscal ideology?

Probably not. The regression of table 8.15 shows what happens if we regress moral ideology, measured by issue positions, on attributionism while controlling for self-identified fiscal ideology. Fiscal and moral ideology are only moderately correlated in this dataset (r of moral ideology with self-identified fiscal ideology is 0.14). The coefficient for attributionism, 0.115 and nonsignificant (one-tailed $p = 0.12$, which is at least more consistent with some effect than with no effect) has only declined from 0.134 where fiscal ideology was excluded from the regression. The evidence, then, for an attributionism-moral ideology link is not terribly strong, but

exists. This result will feel familiar to you unless you have skipped from the table of contents straight to this page.

Table 8.14. Correlations of attributionism scale with ideological dimensions, student sample 2

Ideological dimension	Corr. with attributionism	p – value, one-tailed
Fiscal, by issue position	0.34	0.00005
Tough-tender, by issue pos.	0.26	0.0009
Moral, by issue position	0.12	0.08
N = 135		

Table 8.15. Dependent variable moral conservatism, explained by attributionism and fiscal ideology, OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Attributionism, standardized	0.11 (0.09)	0.105
Self-identified fiscal ideology (0 to 1)	0.57 (0.32)	0.037
Sex (0=M, 1=F)	0.12 (0.17)	0.50
Race (0=white, 1 = nonwhite)	0.49 (0.18)	0.007

N=133, R^2=0.08

Significance tests one-tailed for attributionism and fiscal ideology, otherwise two-tailed

Next we wish to know whether, in fact, attributionism is related to categorization. Table 8.16 shows the correlations of attributionism, categorization, and other psychological variables. The results regarding categorization are somewhat disappointing. Higher levels of categorization strength, by both the Categorization$_{general}$ and Categorization$_{tough-tender}$ measures are related in the right direction to attributionism, but are only significant at the 0.1 level. More clearly, attributionism appears related to ambiguity intolerance and deliberative complexity.

It is worth noting, finally, that Big-Five Openness, in another result that is becoming familiar, is the *least* related to attributionism. Of the various Openness-*related* cognitive or trait variables employed in the attempt to understand ideology, the description of oneself as open-minded, interested in philosophy or cultured is apparently about as poor a measure as can be used, surely because of (a) demand effects that are too obvious to mention, and (b) the fact that Openness is, of all these measures, the least pure measure of cognitive rigidity, incorporating a broader array of experiential phenomena such as interest in art or one's level of enjoyment in philosophizing, which is not the same thing as cognitive rigidity at all. Other measures used throughout this dissertation—persuadability, preference for Open-minded partners and friends, AI, categorization strength, and of course the variables discussed in this chapter—consistently perform better. And, attributionism shares with deliberative complexity and C-strength the great advantage that it is a task-based measure of cognitive performance rather than a self-description.

Table 8.16. Correlations of attributionism with categorization and other psychological variables, student sample 2

Psychological variable	Corr. with attributionism	p - value
Categorization$_{general}$	0.11	0.096
Categorization$_{tough-tender}$	0.12	0.085
Deliberative complexity	-0.27	0.003
Big-5 Openness	-0.08	0.37
Ambiguity Intolerance	0.27	0.012
Extraversion	0.025	0.77
Agreeableness	-0.002	0.99

N = 135; Significance tests one-tailed except bottom two rows because no predicted direction exists

Finally, it is worth noting that attributionism and deliberative complexity make their own separate contributions to ideology, as shown in the regression of table 8.17. They are not measuring exactly the same thing, however much they may be part of a related family of phenomena.

Table 8.17. Fiscal ideology, standardized, explained by attributionism and DC, student sample 2, OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Attributionism, standardized	0.36 (0.12)	0.001
Deliberative complexity, standardized	-0.245 (0.12)	0.02
Sex (0=M, 1=F)	-0.07 (0.14)	0.59

N=101, R^2=0.17

Significance tests one-tailed for attributionism and DC, otherwise two-tailed

Next I investigate whether the Tallahassee adult sample replicated these results. For the Tallahassee sample, a randomly chosen three of the five attribution questions was administered to each participant for survey-shortening purposes. The average score across those three items became that participant's attributionism score, yielding an attributionism score for every participant in the sample, but due to the method of scale construction and the fact that not a single subject was administered every question, no Crohnbach's alpha was calculated. This measurement is shown correlated with various measures of ideology in table 8.18. No doubt the results will provoke a yawn in everyone other than those wedded to the idea that psychological variables are only related to moral ideology—*i.e.,* most political psychologists.[5] Once again, attributionism is strongly related to fiscal and tough-tender ideology, as well as to the general measure of "non-moral" ideology. And, once again (yawn), attributionism is weakly and barely-significantly related to moral ideology.

As with the northern sample, controlling for self-identified fiscal ideology while regressing moral ideology on attributionism leaves the coefficient slightly smaller, in the right direction, and not-quite-significant as shown in table 8.19, suggesting that attributionism or its precursive cognitive style probably is still weakly related on its own to moral conservatism.

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[5] The author is here indulging his fantasy that more than 4 people on Earth will read this dissertation—or that the 4 people who begin to read it will actually make it this far.

Table 8.18. Correlations of attributionism scale with ideological dimensions, Tallahassee sample

Ideological dimension	Corr. with attributionism	*p* - value
Fiscal, by issue position	0.25	0.004
Tough-tender, by issue pos.	0.32	0.0003
Moral, by issue position	0.15	0.058
Secular issues as single dimension (comprised of fiscal and tough-tender)	0.32	0.0004
N = 113. Significance tests one-tailed.		

Table 8.19. Dependent variable moral conservatism, explained by attributionism and fiscal ideology, OLS coefficients

Independent variable	Coefficient (standard error)	*p* - value
Attributionism, standardized	0.10 (0.08)	0.11
Self-identified fiscal ideology (0 to 1)	1.99 (0.29)	0.000
Sex (0=M, 1=F)	0.48 (0.18)	0.01
Constant	-0.85 (0.30)	0.005

N=110, R^2=0.33

Significance tests one-tailed for attributionism and fiscal ideology. Included in regression but not shown and not near significance: race, education, age.

Could we, then, combine the student and Tallahassee samples and thereby finally reject, at conventional significance levels, the null hypothesis that attributionism is *not* positively related to moral conservatism, while still controlling for fiscal ideology? Not quite. The one-tailed standardized coefficient on attributionism is 0.095 in the identical regression to that in tables 8.15 and 8.19, but

with combined samples. The *p* – value is 0.06 with an N of 245. Probably there's a real effect…but it's not a large one.

Continuing with the Tallahassee sample, is attributionism related to categorization? And what about other psychological variables? Table 8.20 gives the correlations, and the answer is almost a precise replication of the Stony Brook student results, right down to the relative weakness of Big-Five Openness. In this table, I give the correlations between attributionism and categorization, ambiguity intolerance, and deliberative complexity. The correlation between AI and attributionism is eye-popping, but is also somewhat a function of the small subsample who answered the AI items, so I give all the correlations among only this subsample as well, which reveals that the DC-attributionism relationship is even stronger among the subsample.

Table 8.20. Correlations of attributionism with categorization and other psychological variables, Tallahassee adult sample

Psychological variable	Corr. with attributionism	*p* - value
General cat$_{noappliances}$	0.035	0.35
Categorization$_{general}$	0.085	0.19
Categorization$_{subsamples}$	0.19	0.022
Deliberative complexity	-0.26	0.003
Big-5 Openness	-0.08	0.19
Ambiguity Intolerance (N = 55)	0.40	0.001
Delib. Complexity among the 55 who took AI series of questions	-0.43	0.0005
Openness among same 55	-0.22	0.049

N = 113 except where shown

The case for an attributionism-categorization relationship is strong enough that, considering the Stony Brook results, we can be fairly certain such a relationship exists, although it might be indirect. In general, we can conclude with virtual certainty now that attributionism is part of the flexibility-rigidity constellation of phenomena that yield conservative thinking in multiple dimensions.

Finally, we replicate the Stony Brook result that attributionism exerts its own independent effect on ideology even when DC is controlled for in the regressions of tables 8.21 and 8.22.

Table 8.21, showing results for tough-tender ideology, suggests a structural-equation model can be constructed similar to those previously shown, but including attributionism for the Tallahassee sample. The model in figure 8.8 does indeed fit the data very well, CFI = 0.983 and RMSEA = 0.023, and suggests a plausible model in which strong categorization causes a lack of deliberative complexity, which in turn causes not only tough-minded conservatism directly, but also strong attributionism, which in turn causes yet more tough-minded conservatism. It is remarkable how stable the other coefficients are. The direct effect of deliberative complexity on ideology is reduced only from -0.49 to -0.44, while the inclusion of attributionism in the model increases R^2 from 0.46 to 0.52.[6]

Table 8.21. Fiscal ideology, standardized, explained by attributionism and DC, Tallahassee adult sample, OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Attributionism, standardized	0.16 (0.10)	0.048
Deliberative complexity, standardized	-0.17 (0.09)	0.037
Sex (0=M, 1=F)	-0.22 (0.19)	0.25
Age (years)	-0.008 (0.006)	0.17
Constant	0.18 (0.28)	0.52

N=113, R^2=0.12

Significance tests one-tailed for attributionism and DC, otherwise two-tailed. Included in regression but not shown and not near significance: education

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[6] Note that, ideally, attributionism would be modeled as a latent variable measured by the five attributionism questions within the structural equation model. However, while M-Plus can handle the large amount of missing data in the attributionism measure, it cannot simultaneously do this and calculate fit statistics. Hence, I chose to use the pre-scaled attributionism measure used in the correlations and regressions shown earlier.

Table 8.22. Tough-tender ideology, standardized, explained by attributionism and DC, Tallahassee adult sample, OLS coefficients
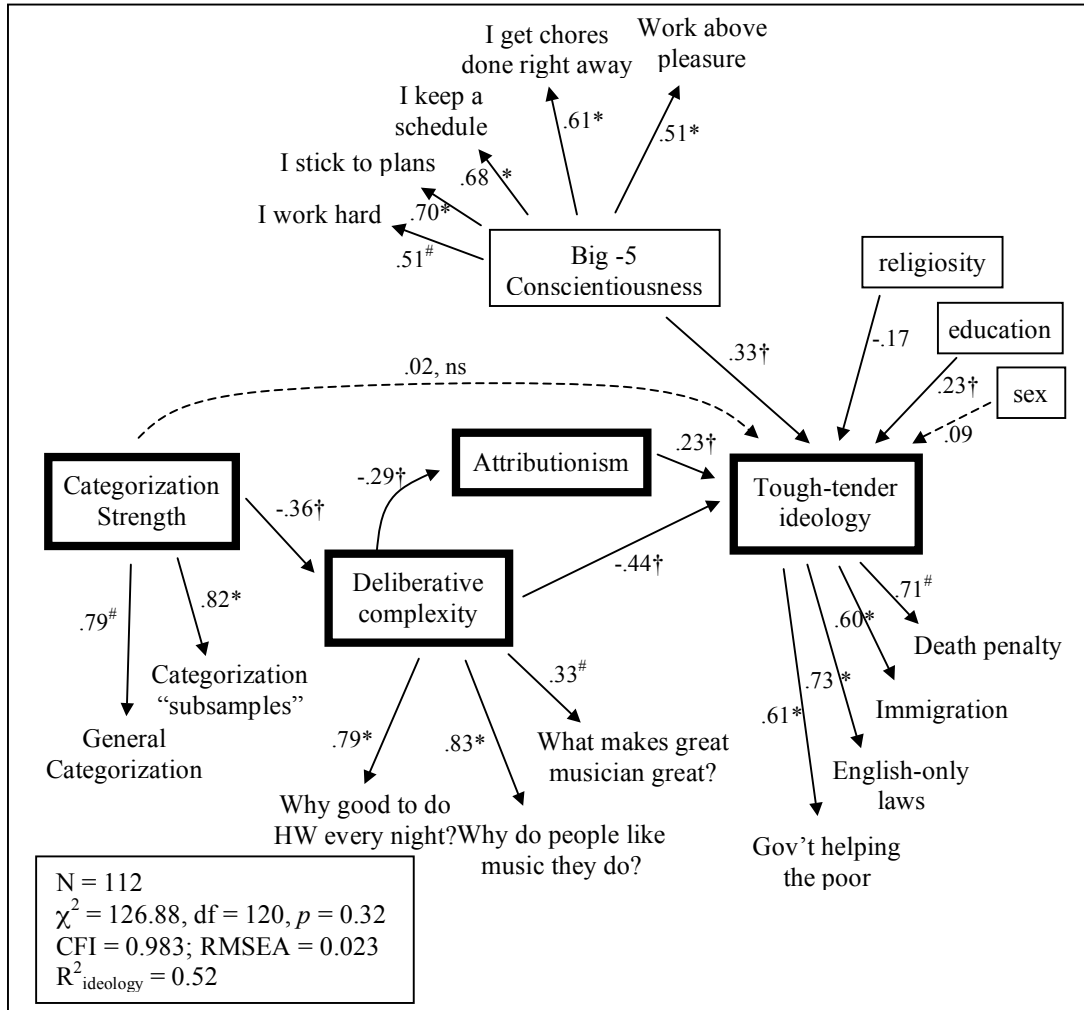
Independent variable	Coefficient (standard error)	p - value
Attributionism, standardized	0.27 (0.09)	0.002
Deliberative complexity, standardized	-0.29 (0.09)	0.0005
Race (0=white, 1=nonwhite)	-0.07 (0.05)	0.138
Education (0 to 1)	-0.68 (0.35)	0.059
Constant	0.44 (0.28)	0.12

N=111, R^2=0.25

Significance tests one-tailed for attributionism and DC, otherwise two-tailed. Included in regression but not shown and not near significance: sex, age.

It must be said that, intuitively, this model makes sense. High categorization strength causes one to think in more mechanical terms. This alone causes a good deal of say-it-like-it-is conservatism. But this mechanical thinking style additionally causes one to view individuals' behaviors and outcomes as the result of attributes, or traits, of that individual, rather than situationally. Hence, policies that affect individuals need not address situational, structural, or systematic influences on people's lives. Outcomes that affect individuals are consequences of those individuals' traits, hence government intervention to change people's lives is either impossible or, worse, unjust.

Figure 8.8. Structural equation model, tough-tender ideology, with attributionism

I get chores done right away

Work above pleasure

I keep a schedule

I stick to plans

I work hard

.61*

.51*

.68*

.70*

.51#

Big -5 Conscientiousness

religiosity

education

sex

.33†

-.17

.23†

.09

.02, ns

Categorization Strength

Attributionism

.23†

Tough-tender ideology

-.29†

-.36†

Deliberative complexity

-.44†

.71#

.60*

.73*

.61*

Death penalty

Immigration

English-only laws

Gov't helping the poor

.79#

.82*

Categorization "subsamples"

General Categorization

.79*

.83*

.33#

Why good to do HW every night?

Why do people like music they do?

What makes great musician great?

N = 112
χ^2 = 126.88, df = 120, p = 0.32
CFI = 0.983; RMSEA = 0.023
$R^2_{ideology}$ = 0.52

†p < .05, *p < .01, # no p value since loading fixed. *All coefficients fully standardized.*
Significance tests one-tailed except education, religion, sex.

More on deliberative complexity

To quench the reader's burning desire for more about deliberative complexity, there was an another attempt to relate deliberative, or even Tetlockian integrative, complexity to ideology in the survey administered to student sample 2. This could easily have been reported alongside the various behavioral asymmetries in chapter 6, but because this miniature experiment was explicitly designed under the rubric of integrative complexity, I report the results here. The procedure had a participant read

two essays, each of which advocated the same uncontroversial position on a particular subject. The essays were approximately balanced for length, but one of them was deliberately written with high integrative or deliberative complexity and the other was written with low complexity. I wrote the essays myself, and in crafting them I did my best to follow Tetlock's descriptions of integrative complexity. I do *not* have an independent verification from properly trained coders that in fact I succeeded in making the high-IC essays high and the low-IC essays low, a methodological vulnerability I'm willing to accept at this stage. The essays written for this mini-experiment are shown in the appendix to this chapter, and readers are invited to judge for themselves whether they succeed in their aim.

I will say that my strategy, specifically, was to make the low-complexity essays into, essentially, laundry lists of independently valid and straightforward reasons why the uncontroversial position was the correct one, while the high-complexity essays indicated that the reasons were, well, more *integrated*, more complex, and more mysterious. To the extent that I succeeded in conveying that it was an *interaction* of reasons that compelled agreement with the uncontroversial position, then, a success of this experiment would help to address the criticism that my other, previously discussed, measure of deliberative complexity was not fully *integrative*.

As indicated, each participant read two essays, with each advocating the same "uncontroversial position." It was randomized which of the following four "uncontroversial positions" a participant confronted: (1) A person is better off the more educated they are; (2) Watching 4 or more hours of TV every single day is bad for children; (3) Daily exercise is a good idea; and (4) As a general rule, having more discipline in your life is better than having less discipline. To make sure, however, that the positions were uncontroversial to participants, participants were first asked whether they "would agree that, as a general rule," the statement was correct. Participants who did not agree advanced to the next item without reading either essay.

There was further randomization. Once a participant agreed that the statement was correct, the order in which they read the essays—high complexity, low complexity—was randomized to handle the possibility that first or last impressions made for more persuasive essays.

After reading the two essays advocating a position, subjects were asked two questions: (1) Which was the more persuasive, answering on a five-point scale allowing that one essay was "far" more persuasive or "somewhat" more persuasive, or that the two essays were "exactly equal" in persuasiveness; and (2) Which "seemed like it was more similar to the way YOU think about things?" As it turned out, thinking the high- (or low-) complexity essay was more persuasive was highly correlated with saying it was similar to one's own way of thinking, and the two measures were combined into a reliable two-item scale, $\alpha = 0.76$.

Results: A small subsample of $N = 53$ was administered this series of questions. Moral and tough-tender ideology were essentially uncorrelated with preference for the high-complexity essay, but, as table 8.23 shows, fiscal conservatives, as measured by issue positions, did strongly choose, more than liberals

did, the low-complexity essay, exactly in line with predictions. I control in the above regression for self-identified general ideology, and this strengthens the result, possibly indicating that the "effects" of this style of thinking operate on political opinion formation exclusively, and hardly at all on self-identification. Indeed, a preference for the high- or low-complexity essay was uncorrelated with self-identified general liberalism-conservatism, r = 0.03.

Table 8.23. Fiscal ideology, standardized, explained by preference for low-complexity essay, student sample 2, OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Preference for low-complexity essay	0.33 (0.11)	0.003
Self-identified general lib-con (0 to 1)	2.64 (0.39)	0.000
Sex (0=M, 1=F)	-0.28 (0.22)	0.201
Race (0=white, 1=nonwhite)	-0.003 (0.02)	0.86
Constant	-0.72 (0.22)	0.002

N=53, R^2=0.53

Significance tests one-tailed for essay preference and ideology, otherwise two-tailed. Included in regression but not shown and not near significance: education

At any rate, in the presence of this control, a one-standard deviation increase in preference for the more "straightforward," lower-complexity essay is associated with a 0.29-standard-deviation increase in fiscal conservatism. Without the control for self-identified ideology, the standardized coefficient remains almost unchanged, at 0.29, but the p – value drops to a still-significant 0.03, one-tailed.

A larger subsample, N = 93, was administered a mini-experiment whose form was exactly the same as the above experiment, but in which the positions taken were not blandly uncontroversial, but were in fact explicitly political positions—perhaps not terribly controversial, but certainly more so than the previous four. Subjects were randomly assigned either to read two essays arguing that "The U.S. should strive to have great public schools" or that "a person should be allowed to own a gun for protection." (These essays are also included in the appendix.)

The results of this experiment for student sample 2 are mostly and disappointingly null. None of the issue-based measurements of ideology was correlated significantly with preference for the higher- or lower-complexity essay advocating a political position. Only self-identified general liberalism-conservatism generated a significant correlation, with preference for the low-complexity essay associated, as predicted, with self-identified conservatism, r = 0.18, p = 0.04, one-tailed.

Finally, we must ask whether participants' responses to reading these high- and low-complexity essays really are acting as measures of deliberative complexity. That is, do the essay-experiments, as measures, have criterion validity as DC, or as rigidity-flexibility measures more generally? The answer is that, yes, they do appear to be related in the right direction to the openness family—both responses to the apolitical and to the issue-oriented essays, as shown by the correlations in table 8.24. Both measures are significantly related to Big-Five Openness such that more Openness predicts preference for the high-complexity essay. More deliberative complexity is related in the correct direction to preference for the high-complexity essay in both cases, but only significantly for the apolitical essays. Meanwhile, attributionism "correctly" predicts preference for the low-complexity essay in both cases, but only significantly for the issue-oriented essays. Ambiguity intolerance is mostly unrelated to the measure.

Table 8.24. Correlations of preference for low-complexity essays with psychological variables, student sample 2

Psychological variable	Corr. with preference for low-complexity nonpolitical essay	p – value (one tailed)	Corr. with preference for low-complexity political essay	p – value (one-tailed)
Big-5 Openness	-0.23 (N=59)	0.041	-0.21 (N=91)	0.021
Ambiguity Intolerance	0.04 (N=28)	0.42	0.085 (N=65)	0.25
Deliberative complexity itself	-0.24 (N=59)	0.031	-0.084 (N=93)	0.21
Attributionism	0.15 (N=59)	0.13	0.17 (N=93)	0.049

Tallahassee sample: The essays advocating a political position performed much closer to expectations in the Tallahassee sample. No Tallahasseeans were shown the apolitical essays, but small subsamples were shown the guns-should-be-

allowed and the public-schools-should-be-great essays. 29 read the pro-gun essay, and 33 read the pro-school essay. No participant saw both. Participants were asked after reading an essay which was the more persuasive, and which was the more similar to their own thinking style. Ideological dimensions were not related to finding either the high- or low-complexity essay more *persuasive*.[7] However, subjects apparently can separate this from how they think, because when rating which of the two essays is "closer to how you think," conservatives—tough-minded and moral in particular—indicate that they think, more than liberals, like the low-complexity essays. I created a combined measure of "thinking like the low-complexity essay" which simply combined the responses from the 29 gun-essay and 33 school-essay readers, for a total N of 62. The results are shown in table 8.25.

Table 8.25. Correlation of "thinking like the low-complexity essay" with ideological dimensions, Tallahassee sample

Ideological variable, by issue positions, standardized	Corr. with "thinking like low-complexity essay"	p – value (one-tailed)	Corr. with finding low-complexity essay more persuasive	p – value (one-tailed)
Fiscal ideology	0.23	0.034	0.09	0.25
Tough-tender	0.34	0.004	0.14	0.14
Moral ideology	0.30	0.009	0.13	0.16

N = 62

Finally, it seems, we have one of those rare results where something ostensibly psychological predicts moral ideology better than fiscal ideology (though not better than tough-tender). And the results for fiscal ideology disappear when controlling for self-identified "social" conservatism, suggesting that fiscal conservatives may only rate their thinking as low-complexity to the extent that they are morally conservative. Tough-minded conservatives appear to be low-complexity thinkers net of their level of moral conservatism.

Still, I wondered whether I could trust that this was a genuine case of a kind of rigidity measure predicting moral-ideology. Instead, perhaps low-complexity thinking on issues such as guns or schools was "taught" by churches: religious people may be predominantly gun-owners, and hence the issue may be "settled" and simple for

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[7] Note that this is not a particularly good measure of how persuasive the essay actually is, because after having read both essays, participants are either convinced of the essays' argument or not, if not, then both essays have failed; if so, then either both essays together have succeeded, or this was the participant's position originally.

them; moreover, the very religious may often home-school their children or send them to parochial private schools, so they may relate in some strange or unexpected way to the great-public-schools question (even though they had to have agreed that we should have them in order to answer the question). But in a regression controlling for religious attendance, low-complexity thinking as measured by self-rated similarity to the essay is still strongly related to moral conservatism. See table 8.26, where self-rated low-complexity thinking is coded from 0 to 1, so that going from a strong preference for the high- to a strong preference for the low-complexity essay is associated with nearly a one-third standard-deviation increase in moral conservatism.

Table 8.26. Moral ideology explained by thinking like low-complexity essay, controlling for religious attendance, Tallahassee sample, OLS coefficients

Independent variable	Coefficient (standard error)	p - value
Thinking like low-complexity essay	0.29 (0.12)	0.01
Religious attendance (0 to 1)	1.52 (0.34)	0.000
Sex (0=M, 1=F)	0.09 (0.22)	0.681
Education (0 to 1)	-0.68 (0.49)	1.70
Constant	-1.01 (0.42)	0.02
N = 59; R^2 = 0.36		

Curiously, rating oneself as thinking more like the low-complexity essay was not significantly related to any psychological variable, including deliberative complexity—although it was correlated in the predicted direction to DC, AI, and attributionism.

Chapter Summary

We now have strong evidence over two datasets from two different regions of the United States that ideology—especially fiscal and tough-tender ideology—is related to measures of cognitive complexity, and that this cognitive complexity is itself related to perceptual categorization. Two new measures were introduced—deliberative complexity, a close cousin of Tetlock's integrative complexity, but measured in such a way that it is amenable to survey instruments—and

attributionism, which is essentially a measure of the tendency to commit the fundamental attribution error in explaining behaviors or event outcomes involving individuals.

For both variables, there is good theory explaining why strong perceptual categorization should lead to, or at least should be associated with, high levels of deliberative complexity and low levels of attributionism, and indeed it is. Structural-equation models indicated that a categorization-to-cognitive-complexity-to-ideological-thinking model of opinion formation is plausible.

Finally, alternate measures of deliberative complexity gave subjects an opportunity to read competing essays endorsing the same substantive viewpoint, and indicate which ones were more persuasive and closer to their own style of thinking. Results were not universally consistent, but essays constructed to be higher in deliberative or integrative complexity tended to be more attractive to more Open-minded and more deliberatively complex individuals, and a preference for these more complex essays also tended to be associated with ideological liberalism. The essay experiments, then, provided some corroboration of findings in both locales.

Broadly, deliberative complexity and attributionism proved to be well situated in the constellation of cognitive rigidity/flexibility variables, and seem intuitively and theoretically satisfying as *causal* variables vis-à-vis opinion formation, which makes them superior in important ways to self-descriptive trait and traitlike variables.

The case for a general cognitive flexibility or fuzziness, then, as a cause of ideological liberalism, and for rigidity or mechanicalness as a cause of conservatism, continues to grow.

Appendix: essays used in the mini-experiment.

Essays advocating that "Daily exercise is a good idea"

High complexity: Many people exercise to become more attractive or for athletic competition, but even if you don't care about those things, chances are you still know, deep down, that daily exercise is a good idea, because of many reasons that you may be vaguely aware of, but seldom articulate.

For example, daily exercise improves your posture, and this has secondary effects on the way other people relate to you: people with better posture enjoy more respect from others, and because we are all social creatures, more respect from the community can translate in difficult-to-see, but very real, ways into more *self*-respect. One could even enjoy these hidden social benefits long before weight or strength goals are reached.

There are other nonobvious ways in which exercise is beneficial. Through all of pre-history human beings have done physical work: our bodies are *designed* for vigorous activity. But in the modern world, many of us are sedentary. This gives us a pervasive sense that we are not fulfilling our function, not using our bodies properly, which creates a sense of guilt or anxiety. And because in prehistoric times, hunting and gathering food were communal activities, sitting deskbound all day can create a sense that we are not participating in the community, cutting us off from our social support system in ways we never anticipated. So exercise indirectly helps us feel we are fulfilling our purpose and participating in the community.

This is only the tip of the iceberg. Daily exercise is good in many complex and unseen ways, but we're still vaguely aware of them: we all "just know" that exercise is good for us.

Low complexity: Not everybody exercises daily, but almost everybody knows it's a good idea, because the reasons for exercise are easily seen. For one, daily exercise improves strength and endurance. Although some people may naturally be stronger than others, everyone has the *ability* to get stronger and to build endurance by exercising everyday.

For another thing, daily exercise makes you look better. Although some say the desire to look good is vain or shallow, almost anyone—even those who say this—would rather look healthy and fit, and while some people may "naturally" look healthy without exercising, most of us begin to look less than robust if we are sedentary day after day.

Another reason is that exercise teaches self-discipline. Exercise is not always fun, and if intense, it can be extremely challenging. The ability to answer this physical challenge during daily exercise can make us more self-disciplined.

Also, exercising frequently relieves stress and makes you feel better. There's no shortage of scientific evidence on the positive effect exercise has in lowering stress hormone levels, so if you want less stress, exercise is your first option.

Finally, and probably most importantly, there is no question that daily exercise increases lifespan. Numerous studies show this conclusively.

In conclusion, it would truly be an odd person who would not want the several clear advantages exercise gives you: strength and endurance, better appearance, self-discipline,

lower stress levels, and a longer lifespan.

<u>Essays advocating that "Watching 4 or more hours of TV every single day is bad for children "</u>

High complexity: Reading books is hardly more "productive" than watching TV, but hardly anyone objects to a child's spending long hours reading. Why?

It is because we *sense* something disturbing about zoning out in front of the tube, and this sense is accurately telling us something: TV, unless consumed in moderation, is part of a confluence of hidden factors that block our society from realizing its potential in ways more sinister than mere wasted time.

Begin by noting that watching TV may produce a semi-hypnotic state, and this can interfere with sleep patterns, producing a tired generation of children who arrive at school unreceptive to learning. And watch how the effect builds on itself: the shallow, stereotyped view of the world presented by TV is made worse because children are psychologically "blocked" from confronting it with critical analysis at school. This tiredness, in turn, acts in concert with the frenetic rhythm of modern editing, conditioning a short attention span, blending with the tired mind to produce a cynical impatience that can pervade all of society.

Next, a desperate society looks for relief. And once again, TV feeds back into the vicious cycle: having made us anxious, ads promise relief if only we will spend our money in this or that way. There's no escape.

Of course, these are only parts of the story. Such patterns take root more deeply the earlier we are exposed, so children are especially at risk. Of course, TV is not the cause of all problems, but is a part of a chain of interacting risk factors. Something like this is exactly what we are sensing when we "know" that children's TV hours should be limited.

Low complexity: It's important for parents to restrict the amount of television they allow their children to watch. There are a number of important reasons for this, any one of which is sufficient to convince parents to be concerned.

The first reason simply has to do with learning. Children will learn less from TV than from other activities. This is obvious from the fact that most programming—even most children's programming—is not of an educational nature.

Second, sitting in front of a television offers no physical fitness benefits, and children who spend many hours in front of a television are likely to be overweight and exhibit poor cardiovascular conditioning.

Next, television is an unconstructive use of time. Children are almost entirely unproductive during television time—they're doing no arts and crafts, no homework, and no household chores. This is not to argue that children or anyone else should be working 24 hours a day. But 4-plus hours of television, strung end-to-end, goes beyond relaxation into the realm of a wasteful squandering of valuable time.

Finally, television gives children an unrealistic view of what the real world is like. For

example, most actors on television are unrealistically good-looking. Sexual relationships depicted on TV are unrealistically sensational. Children should learn about how the world works from their parents and from their own experience, not from TV.

For any one, or all, of these reasons, parents should keep a close eye on how much TV their children watch, and limit it to much less than 4 hours per day. In fact, occasionally going an entire day without TV won't kill you!

Essays advocating that "Having more discipline in life is better than having less discipline"

High complexity: Sure, discipline lets you get more done, but the real reasons for discipline are less obvious. Discipline is one component, among many, of a life of satisfaction, because of the ways in which being disciplined interacts with other elements of one's life. Discipline, for example, lowers chaos and brings simplicity into life, because it keeps one's schedule from becoming cluttered with undone tasks—but then an unexpected side-benefit emerges: it gives us *space* in our lives, which we can fill, ironically, with *undisciplined play.* Creative discoveries result.

But it gets better: the effect of discipline multiplies and folds back on itself, because the ideas we discover can then be *implemented* using discipline!

Another example: disciplined people have higher self-esteem, which in turn has secondary effects, such as improving interpersonal relationships, which means bringing into your life more people you can count on. Once again, discipline interacts with a separate habit—being friendly and engaging—to create multiplied effects, enhancing overall well-being.

In other words, discipline is a powerful force in life *not* because by itself it's such a big part of the overall picture, but because there's much more to the picture that works hand-in-hand with discipline.

Low complexity: The reasons for discipline in life are straightforward and easy to enumerate. *First,* you'll get more tasks done if you're disciplined. In modern life, there's always a lot that needs to get done, and a lack of discipline will mean a backlog of undone tasks.

Second, discipline makes you a dependable person. With discipline, you show up on time to meetings, classes, appointments, and so forth. People can count on you.

Third, discipline in the pursuit of goals—that is, constantly working toward your goals without starting and stopping—is the only way to achieve big things. It's rare, if not impossible, for someone to have great success in their endeavors if they are undisciplined.

Fourth, discipline brings self-improvement at the things you do. For example, top-notch musicians, athletes, writers, scientists, businessmen, and so forth all got to be top-notch because they were disciplined in practicing and improving.

In sum, it's obvious that discipline allows a person to do more, be dependable, reach higher goals, and improve themselves. Without discipline, none of this is likely. In fact, it isn't even possible!

Essays advocating that "A person is better off the more educated they are."

High complexity: Education is wonderful not just because it increases skills, but because it enhances and deepens life *outside* the classroom—often in unseen ways. For this reason, exactly *why* more education is a long but powerful story.

We begin by noting that better education expands the ability to imagine multiple perspectives of the world. This happens not only by studying other cultures, but by studying the world through multiple academic disciplines, like science, literature, etc. This broadening of perspective then spreads through your whole life by enhancing your ability to communicate with people you meet, to relate to characters in books (which then deepens the meaning in literature), etc. It allows you to serve your fellow humans better, too, by seeing ways you can benefit them that even they might not see.

Educated people, due to their enhanced understanding, are also able to engage with more different aspects of life—to read more different books and magazines, to discuss more far-ranging matters with people, to follow current events in science, the arts, politics, and so forth…and there's a hidden benefit to this. It leads you to stay mentally active and mental activity then protects the mind in old age.

We are only beginning, then, to see how being better educated spreads benefits to every remote aspect of your life, and indeed to the world around you.

Low complexity: Although most people agree that one of the best ways to improve your life is to become more educated, it's worth recounting several of the reasons why, especially if you are someone who is considering furthering your own education.

One reason is simply that better education leads to getting a higher-paying job. In many if not most careers, the more skilled one must be to fill a position, the higher the salary. Study after study shows that education is very strongly associated with higher income.

A second reason is that education allows you to handle important life tasks, like buying insurance, investing your savings, and so on. Many people don't know what to look for when they buy various kinds of insurance. Even more people have no idea how to invest their money effectively. Often, then, people end up with less than optimal financial plans, or no plans at all. Education is the one sure way to fix that.

A third reason is that education allows you to hold accountable people who work for, or with, you. For some quick examples: a basic knowledge of biology and health; math; and politics allows you to hold, respectively, your doctor; your bank loan officer; and your government representatives accountable for the services they're supposed to provide.

In sum, it is quite easy to list the fundamental reasons why more education is better than less.

<u>Essays advocating that "Gun ownership should be allowed to individuals"</u>

High complexity: Although gun ownership presents obvious dangers, people must still to be allowed to own guns for personal protection. The reasons are not simple, but a deep understanding of the issue leads to this unavoidable conclusion.

The argument begins with the psychological effect gun rights have on the citizen. Self-protection is a deep instinct, and when government denies us a tool of self-protection—even when it "replaces" this tool with police protection—a citizen feels more helpless and less free. Even citizens who choose *not* to own guns are susceptible to feeling reduced personal autonomy, because they know their options are limited.

But feeling helpless is only the beginning of a chain of harmful effects. Individuals who feel helpless, in turn, make for a helpless-feeling *community*, and so collectively they look to an outside force—police—for protection, and not to each other. Thus the reduction in freedom results in a reduction in community. People become more distant, which means they also suffer degraded relationships on multiple, deep, and often unseen levels—they help each other less, support each other less, are less friendly, more suspicious.

Obviously, guns alone don't automatically make happy communities. Self-protection rights are only one among many indispensable freedoms.

Nor do guns render police unnecessary. Instead, the argument is that citizens who sense deeply that they can rely on, and are obligated to, each other, make for a better community. And such citizens are the product of the fundamentally free society—which *must* mean one with the freedom of self-protection.

A nation that protects gun rights, then, is a community that tells itself, "we trust each other to be free." The very indirect result, in the end, is healthier democracy. And gun rights contribute to this *whether or not they actually stop crimes.*

Low complexity: Americans have a vital and important right to own a gun for the purposes of self-protection and protecting one's family. This right is fundamental and is a direct consequence of several simple and clear facts.

First, the right to bear arms is guaranteed by the U.S. Constitution in the 2nd amendment of the Bill of Rights. Of course, none of the rights in the Bill of Rights has ever been repealed, and probably none ever will be—people would not stand for it. So the first reason why people should be allowed gun ownership is that interfering with that right would run directly afoul of the Constitution.

Just as important is the undeniable fact that criminals are usually armed. If a person is going to protect herself from criminals, she must have access to the same technology that criminals possess.

Third, even aside from the Constitution, the right to self-defense is as fundamental and undeniable a *human* right as there is. No person can be expected to sit idly by while their family is being attacked. In fact, a person must have access to *whatever means are necessary* to provide for their own safety.

Finally, it's a fact that legally owned guns are successful in stopping thousands of home

invasions in the U.S. every year. *Guns do stop crime*. In conclusion, there's really no need for complicated theories to understand the need for gun rights. Imagine someone invading your house and attacking your loved ones, and the issue is crystal-clear.

<u>Essays advocating that "The U.S. should strive to have great public schools."</u>

High complexity: The public schools are obviously charged with teaching basic skills, but they are also our best hope for realizing a much broader goal. In difficult-to-define ways, the schools are our best hope for making ourselves a better nation, and this is why we must make them great.

One possible starting place for the argument is to see that the schools are an expression of the values of the nation itself: if what we invest in teaching children is an expression of who *we* are as a society, then by allowing mediocre schools, we affirm a strong message to ourselves: *we are a mediocre culture*. The realization thus emerges that the schools have an effect on the *spirit* of our nation wholly apart from what particular skills they teach.

Building on this, add the fact that throughout a lifetime, people learn more outside the classroom than in, so perhaps the most valuable thing the schools can do is help us become a nation that embraces lifelong learning. This embrace is not taught as a classroom lesson, but is a pervasive part of the cultural atmosphere. An *explicit* societal commitment to great schools helps create that atmosphere *implicitly*. It may not matter so much whether schools require more or less math, more or less English. What matters is that children *feel* that learning is sacred. Only a full-bodied commitment to schools can communicate that. The benefit is then secondary, having to do with how we learn from the experiences we have *after* we leave the public schools.

This argument only scratches the surface. Great schools would have a ripple effect, touching all aspects of society. Most benefits of striving for great schools are not even measurable on tests!

Low complexity: Everyone should endorse the idea that the United States should strive for first-rate public schools, and refuse to accept mediocrity. The reasons why are not hard to understand.

First and foremost, taxpayers pay a lot for the schools, and should demand their money's worth. In fact, the average expenditure per student can exceed $7,000. That's expensive, and taxpayers have a right to demand high quality in exchange for their money. We must get what we pay for.

The second, and equally important, reason is that for a citizen to survive in this complex world, he needs to have good skills. The world is not the simple place it used to be, and to buy and sell things in the marketplace, to drive a car, to communicate with business and government, these things require not only basic skills, but often require quite sophisticated skills, and without them, a person can't be a functioning citizen.

Third, the schools teach our children values. People are not born knowing how to be good citizens, and although this must be taught in the home, the schools can reinforce it. Only good

schools can do so effectively.

Finally a nation's skills are what allow it to compete on the world stage. Other nations strive for good schools, and if our public schools are worse than theirs, they will out-compete us. So we need good public schools to keep ahead of the rest of the world.

In sum, top-notch public schools are a critical tool that has very specific results: they give the citizens what they pay for, they allow people to have necessary skills, they teach values, and they allow the nation to compete on the world stage.

Chapter 9

Incorporating political knowledge

The theory I've presented argues that strong categorization and mechanical deliberation lead to political opinions we recognize as conservative. *In theory*, then, a rigid or mechanical thinker, presented with an issue he's never heard of, is more likely to generate a conservative opinion, even in a vacuum, just by thinking about the question at hand.

But of course nobody actually generates opinions in this way. People select from different policy positions which are offered in a marketplace of ideas. It's unlikely anyone settles on a policy position via pure abstract thought without first realizing that this position exists and is held by someone, somewhere. For this reason, C-theory in action actually argues that the logic offered in the marketplace for conservative versus liberal positions is more attractive and more sensible to categorizing thinkers—not that each categorizing thinker reinvents all of conservative thought from scratch by application of his cognitive style to the problems of the day.

However psychological a process opinion formation may be, no one should doubt that policy positions are also "learned" once an individual realizes with which political camp he has cast his lot. Once someone realizes he is a liberal, motivated reasoning (Taber and Lodge 2006; Ditto and Lopez 1992; Lord, et al. 1979) should lead him to favor other liberal positions, even without asking himself whether the logic supporting them is sound or matches his own deliberative style. Nonetheless, C-theory maintains that if some positions are more congruent with one rather than another style of cognition, then it's (A) over time unlikely that that position will wind up in the "wrong" basket of policy positions making up a doctrinal ideology, and (B) the adherents of that ideology will remain in an "unstable" state with regard to that policy position—that is, it's likely that, at some point in the history of the polity, their camp or party will adopt the more natural position.

Nonetheless, I concede policy-position learning occurs. And this introduces an interesting question: is it possible that much or all of the effect of cognitive variables like categorization strength on ideology operates *socially,* mediated by a learning process rather than directly? The way this would happen is as follows. Strong categorizers and mechanical thinkers recognize each other. Flexible, fuzzy thinkers recognize each other. People who share a psychology prefer to socialize together. If Openness to Experience, for example, is a manifestation of cognitive rigidity, then following McCrae's arguments that Openness has dramatically stronger social consequences than other personality dimensions, strong categorizers should socialize with other strong categorizers and weak with weak. In such social settings, they learn from one another a constellation of policy positions. Perhaps those policy positions are inherently congruent with the ingroup's psychology, as I've argued, but for the vast majority of ingroup members, the positions, as well as the standard logic

supporting them, is learned by rote. Indeed, it's possible that categorization strength has quite strong effects on ideology, but that *its entire effect is mediated by the fact that like-categorizers socialize with, and listen to, and learn from, only one another*.

Unfortunately, this possibility is largely overlooked by the research I've conducted so far. I have future plans for a research program involving adolescents or young people who are almost completely politically uninitiated, with plans to separate out the effect of reasoning-in-a-vacuum from learning, by giving young subjects an opportunity to choose, among several peers, whose opinion to listen to based on signals as to those peers' levels of cognitive rigidity, and also asking the subjects to apply their own deliberation (whose style would be measured) to the issue. But I haven't conducted those studies.

In the data at hand, however, there may be at least a hint of the plausibility or implausibility of this phenomenon. I measured political sophistication in all samples, and a case can certainly be made that political sophistication is a sort of proxy measure for the extent to which someone hangs out with the politically minded— which probably means the politically like-minded (this assumption is required for opinion-learning inferences to be drawn). It could be argued that, if political sophisticates show strong effects of cognitive style on ideology, while the unsophisticated show no such effects, this might be a hint that cognitive style is causing opinion formation *because of learning from like-minded people* as opposed to cognitive style causing opinion formation due to differential thinking styles applied to issues in a social vacuum. By this line of thinking, if cognitive style affects ideology directly and not socially, the unsophisticated should show equal effects of cognitive style on ideology.

No matter what assumptions we make, however, such a finding would constitute only a hint and cannot be considered conclusive, because there are two equally plausible accounts that would flow from such a result. One is that political sophistication is not a proxy measure for learning from like-minded people, but simply is a proxy measure for familiarity with the marketplace of political ideas generally. Strongly and weakly categorizing thinkers who are sophisticated have heard the logic of all sides, and each has had opportunity to gravitate to the side whose logic matches their own cognitive style. Had the unsophisticated merely exposed themselves to the different arguments, they would take the proper positions as determined by their cognitive style.

The second plausible account is similar, but argues simply that forming a political opinion about an issue often takes a good deal more deliberation than can be done in the span of the few seconds it takes to answer a survey question. The uninitiated may be utilizing "top of head" stochastic sampling over a truly random set of considerations, in the style suggested by Zaller and Feldman (1992).[1] So while the

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[1] Zaller and Feldman argue that people do not possess pre-existing attitudes "at the level of specificity of typical survey items." People are ambivalent about issues, and hence stochastically sample over a set of "considerations" to generate an attitude response. This article can probably be placed in the tradition that Jost and others

sophisticated have had time to apply their cognitive styles to political issues, the unsophisticated simply haven't gotten around to doing so. The unsophisticated are still pre-ideological, or latently ideological, and just as soon as they spend some time applying their deliberative powers to the issues, they'll adopt the right positions too, even without social forces acting on them. But they haven't done so yet, and hence our data would not show that their cognitive styles predict their ideology.

So we have competing accounts of a hypothetical finding that the unsophisticated "don't show the effect" of cognitive-process variables. It's still important, however, to know whether we even have the effect, demanding to be grappled with.

At least among the Stony Brook Students, we do.

I begin with student sample 2. Table 9.1 shows a regression predicting fiscal ideology using deliberative complexity, knowledge (coded 0 to 1), and the interaction of those two variables. For this analysis, I have altered the coding of deliberative complexity, a standardized variable, so that the mean is 2 rather than 0, because the interpretability of interactions demands that all variables range only over positive values.

For people with almost no political knowledge whatsoever, higher deliberative complexity is actually nonsignificantly associated with more fiscal conservatism. But more to the point, among those with very, very low deliberative complexity (say, 0) more knowledge strongly predicts more conservatism: either those with low complexity are, along with their political knowledge, also learning conservative positions or, via sophistication, are having more time to apply their low-complexity reasoning to political issues. Someone with a "zero" on deliberative complexity—2 standard deviations below the mean—becomes 2.26 standard deviations more fiscally conservative when their knowledge increases from minimal to maximal (0 to 1).

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before have called "the end of ideology," as its conclusions are consistent with a Converse-inspired view that people mainly have nonattitudes and aren't inherently ideological.

People surely behave exactly this way on surveys quite often, but I would add that those "considerations" must themselves contain, or be, pre-existing attitudes, or else they are of no help in formulating an on-the-spot preference. And there's no reason why an issue position, after time to deliberate on it, cannot itself become an object of unambivalent attitude (affect, really). Zaller and Feldman do not provide a rigorous definitional difference between a position on some matter at issue and a consideration, and I am unconvinced that one exists. A psychological theory of opinion formation would still hold that, given time to think about issues, the uninitiated *would* develop attitudes that attached directly to those issues. And they would do so in ways consistent with their different styles of perception and cognition.

**Table 9.1. Determinants of standardized fiscal ideology, by issue positions.
Student sample 2, OLS coefficients.**

Independent variable	Coefficient (std. error)	p – value (2- tailed)
Deliberative complexity, $\mu = 2$, s.d. $= 1$	0.31 (0.20)	0.116
Political knowledge	2.26 (0.71)	0.002
DC * knowledge	-1.17 (0.32)	0.001
Constant	-0.51 (0.43)	0.231

N = 134; R^2 = 0.18

And equally important, the interaction is strongly significant and negative (pointing toward liberalism), indicating that where both political sophistication *and* deliberative complexity are high, people are more liberal. Indeed, where someone is 2 standard deviations *above* the mean level of deliberative complexity, their DC score would be 4, meaning that an increase in knowledge from 0 to 1 would be associated with a [knowledge x DC] + [knowledge]= 2.44 standard-deviation increase in fiscal liberalism—almost the exact same effect of knowledge in the opposite direction for low-DC thinkers. Clearly sophistication and cognitive style interact in this sample. But the mechanism—learning, additional deliberation—is not known yet, and will require more research.

The finding continues with tough-tender ideology as shown in table 9.2. Here, someone with "zero" political knowledge is actually significantly more likely to be conservative on the tough-tender dimension if they're a more deliberatively complex thinker—a finding contrary to expectations. As knowledge goes from 0 to 1, a low-complexity individual becomes nearly 2 standard deviations more conservative. But if the individual is very high in deliberative complexity, more political knowledge has the opposite effect: going from total ignorance to sophistication increases liberalism by over 3 standard deviations.

Not shown, none of the coefficients are significant (or even close) when the same regression is attempted for moral ideology, even though without the interaction, moral ideology is significantly related to deliberative complexity. It appears that high deliberative complexity predicts moral liberalism regardless of political sophistication—albeit more weakly than it does secular ideology.

For added clarity, figure 9.1 shows the estimated interactive effects of knowledge and deliberative complexity on fiscal ideology. For the figure, "low"

deliberative complexity is fixed at 1.6 standard deviations below the mean, and "high" is 1.6 standard deviations above. "Low" knowledge is a hypothetical score of 0.1 on a scale of 0 to 1, while "high" knowledge is a score of 0.9.

**Table 9.2. Determinants of standardized tough-tender ideology, by issue positions.Student sample 2, OLS coefficients.**

Independent variable	Coefficient (std. error)	p – value (2- tailed)
Deliberative complexity, $\mu = 2$, s.d. $= 1$	0.41 (0.19)	0.04
Political knowledge	1.89 (0.71)	0.008
DC * knowledge	-1.28 (0.33)	0.000
Constant	-0.45 (0.42)	0.293

N = 134; $R^2 = 0.19$

It's clear that, when knowledge is low, there's not much difference in fiscal ideology between high- and low-complexity individuals—and that they are, on average, centrist or slightly liberal. But when knowledge is high, deliberative complexity pushes people toward the extremes of the political spectrum. Also we can see that the positive coefficient for deliberative complexity's "main" effect should probably not be taken too seriously. This coefficient "predicts" that when people are *extremely* low in political knowledge, more deliberative complexity will "make them more conservative." But, as the graph shows, as soon as knowledge barely increases, from 0 to 0.1, the predicted effect of deliberative complexity immediately becomes a liberalizing one.

Figure 9.2 shows the same interaction for tough-tender ideology—the ideology containing feelings about crime, immigration and so forth. Here, it does appear that higher deliberative complexity really does imply more conservatism for low-knowledge individuals, and not only "zero-knowledge." But the interaction effect is clear again. For high-knowledge individuals, more deliberative complexity means more liberalism.

Figure 9.1. Fiscal ideology, deliberative complexity, and political knowledge, student sample 2. Y axis: conservatism = higher scores.
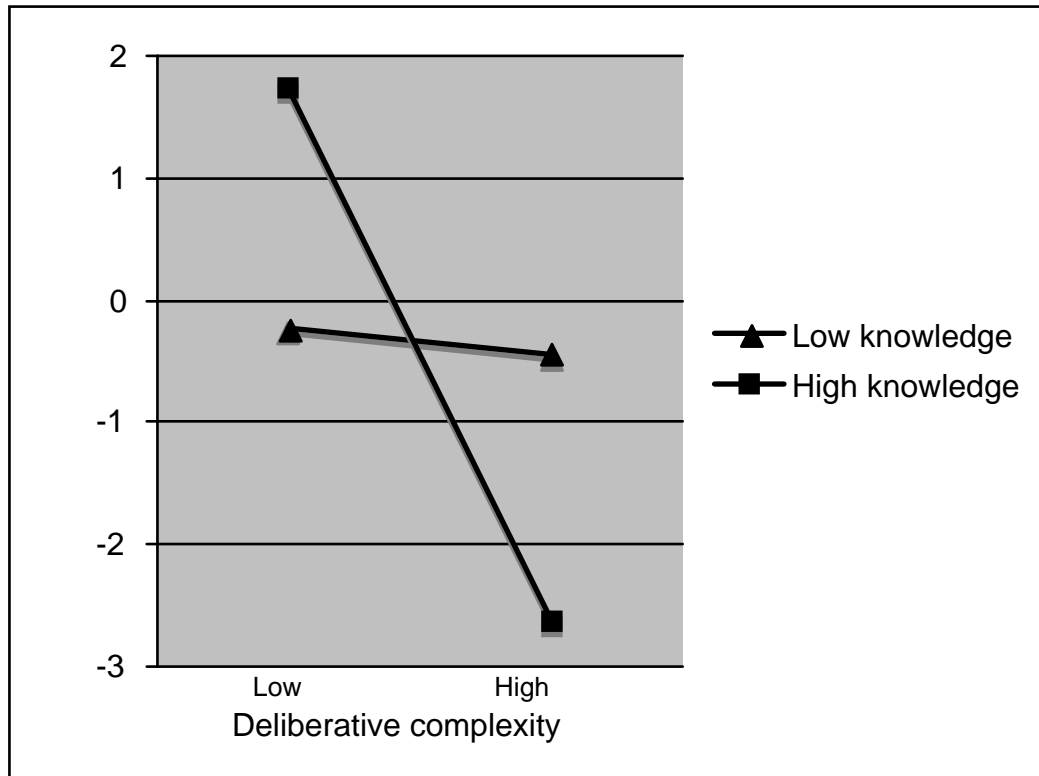
The next question we want to ask is whether categorization strength, hypothesized to be the causal variable "behind" DC also operates differently for different levels of knowledge. In student sample 2, the answer is yes.

Table 9.3 shows the regression predicting fiscal ideology with standardized categorization strength, knowledge, and the interaction of knowledge and categorization strength. Here, categorization strength is adjusted so that its mean is 3 with standard still 1, again to keep all values positive for interaction purposes. The significant interaction shows that higher levels of categorization strength cause conservatism primarily at higher levels of political sophistication. Figure 9.3. illustrates the interactive effect, where "low" and "high" categorization strength are simulated at 2 s.d. below and above the mean. When knowledge is high, higher categorization strength pushes people strongly toward more fiscal conservatism. When knowledge is low, higher categorization strength does little.

Figure 9.2. Tough-tender ideology, deliberative complexity, and political knowledge, student sample 2
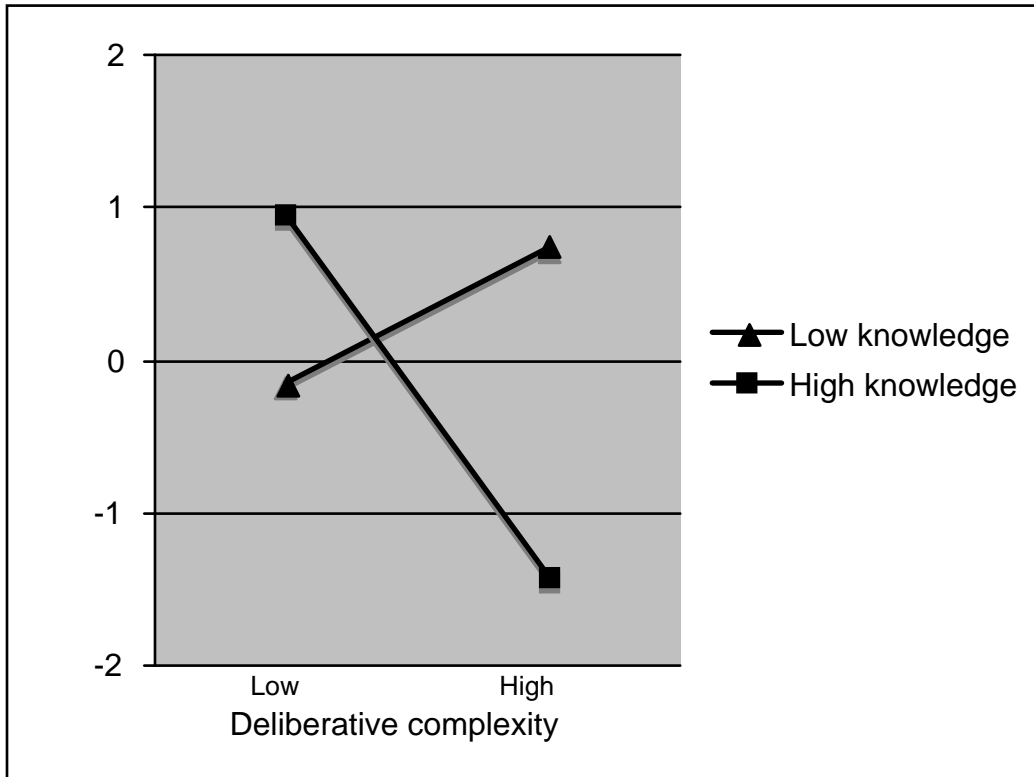
Table 9.3. Determinants of standardized fiscal ideology, by issue positions.
Student sample 2, OLS coefficients.

Independent variable	Coefficient (std. error)	p – value (2- tailed)
Categorization$_{tough\text{-}tender}$, $\mu = 3$, s.d. $= 1$	-0.09 (0.16)	0.531
Political knowledge	-1.57 (0.89)	0.08
Cat * knowledge	0.57 (0.28)	0.047
Constant	0.25 (0.51)	0.619

$N = 166$; $R^2 = 0.056$

Table 9.4. Determinants of standardized tough-tender ideology, by issue positions.
Student sample 2, OLS coefficients.

Independent variable	Coefficient (std. error)	p – value (2- tailed)
Categorization$_{tough\text{-}tender}$, $\mu = 3$, s.d. $= 1$	0.03 (0.16)	0.829
Political knowledge	-1.91 (0.87)	0.03
Cat * knowledge	0.46 (0.28)	0.101
Constant	0.49 (0.51)	0.708

$N = 167$; $R^2 = 0.10$

Figure 9.3. Fiscal ideology, categorization strength, and political knowledge, student sample 2
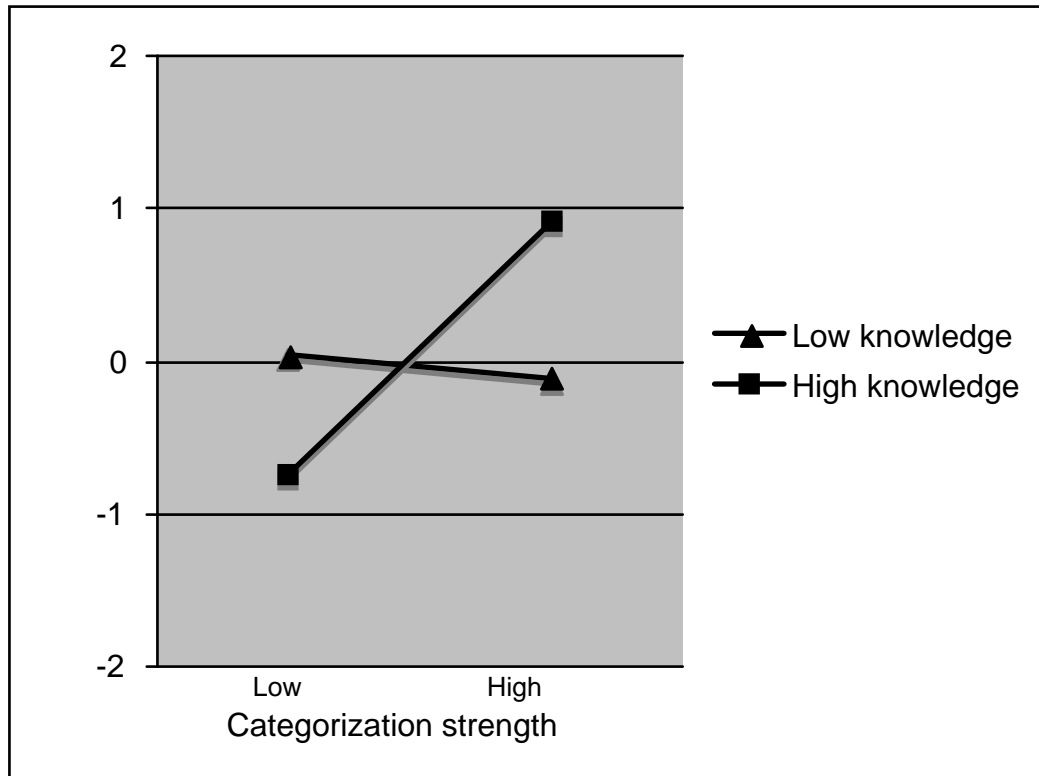
The results for tough-tender ideology in student sample 2 look similar and appear in table 9.4 and figure 9.4.

Apparently in student sample 2, for people who are sophisticated, high categorization strength drives more secular conservatism, and high deliberative complexity drives more liberalism. In structural equation models, it appeared that categorization strength mainly worked *through* deliberative complexity. Is that still the case with the sophisticated? Actually, when we observe only participants who got 2, 3 or 4 questions right in the knowledge quiz, categorization strength appears to work both *through* deliberative complexity *and* directly to affect ideology.

Figure 9.4. Tough-tender ideology, categorization strength, and political knowledge, student sample 2
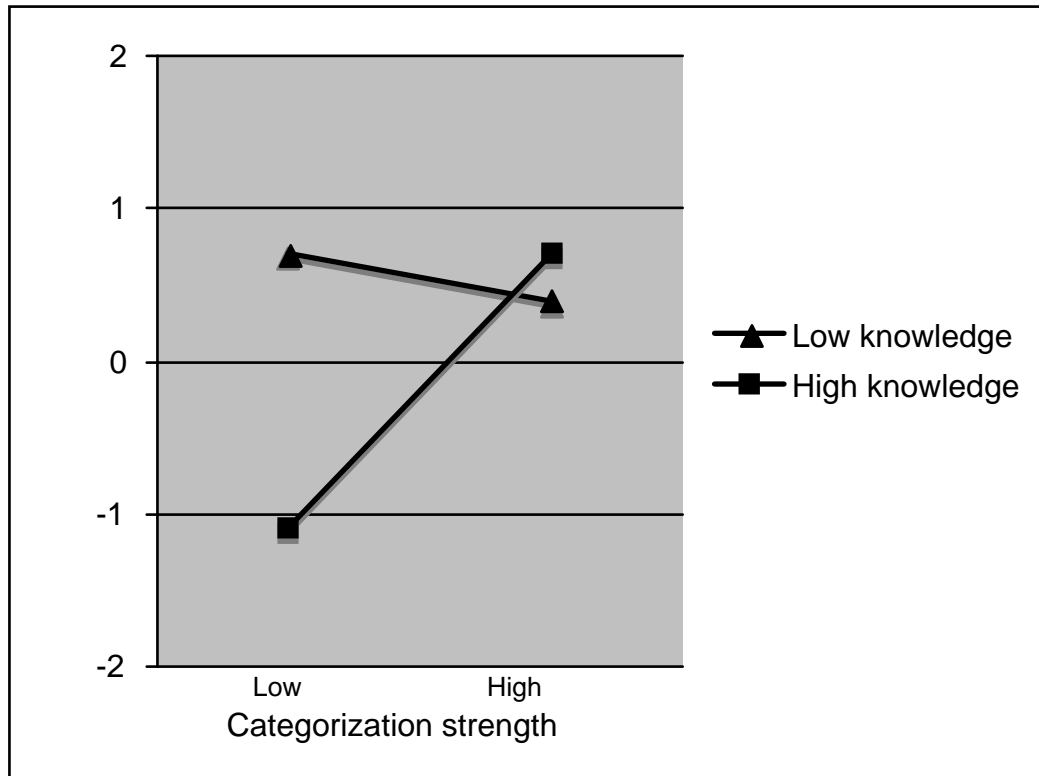
This is evident in table 9.5, where fiscal ideology is regressed on DC and categorization strength only among the more knowledgeable. Even with DC in the regression, higher levels of categorization strength are nearly significantly associated with higher levels of fiscal conservatism—a 1 s.d. increase in categorization associated with a 0.15-s.d. increase in conservatism. A Sobel test is still, not surprisingly, strongly significant, $p = 0.008$, with fully 50% of the effect of categorization mediated through DC.

For tough-tender ideology the story is the same, but with less mediation and more of a direct effect of categorization on ideology, as shown in table 9.6. A Sobel test is still significant, though, at $p = 0.01$, indicating 35% of the effect of categorization is mediated, while its direct effect is a quarter-standard-deviation. It is probably sensible that categorization strength has a more direct effect on tough-tender ideology if we believe that tough-tender ideology is relatively more a function of seeing categorical group differences, while fiscal ideology is more a function of a mechanical style of reasoning, as I've suggested.

Table 9.5. Fiscal ideology affected by both deliberative complexity and categorization strength among more politically knowledgeable members of student sample 2. OLS coefficients.

Independent variable	Coefficient (std. error)	p – value (1 - tailed)
Deliberative complexity, standardized	-0.40 (0.11)	0.000
Categorization$_{tough\text{-}tender}$, standardized	0.15 (0.11)	0.08
Sex (0 = M, 1 = F)	-0.23 (0.21)	0.272
Constant	0.21 (0.34)	0.542

N = 95; $R^2 = 0.21$

 I repeated similar analyses for the Tallahassee sample, and the results are a surprise in light of what we've just seen. I will not show them, for they are entirely uninteresting: the interaction between knowledge and deliberative complexity never approaches significance. Deliberative Complexity is negatively related to conservatism in all three dimensions (only near-significant with moral), but there is no apparent difference across levels of knowledge for any of the three dimensions. Nor is there any difference in the effect of categorization strength across levels of knowledge.

 In Tallahassee, whether low or high in political sophistication, more DC means more liberalism, more cat-strength means more conservatism. I'm not sure why it turned out this way, but the Tallahassee sample generally had higher levels of knowledge (0.66 versus 0.52 on a 0-to-1 scale). However, levels weren't so high as to suppress variance in political knowledge via a ceiling effect: the Tallahassee sample's knowledge scores had a slightly larger standard deviation.

 In sum, reading the different results together from the two locations, it does appear a certain level of political knowledge is at least likely to be helpful, but perhaps not necessary, for psychological variables to push people toward conservative or liberal stands on secular issues. This *could* point to a learning effect.

Table 9.6. Tough-tender ideology affected by both deliberative complexity and categorization strength among more politically knowledgeable members of student sample 2. OLS coefficients.

Independent variable	Coefficient (std. error)	p – value (1 - tailed)
Deliberative complexity, standardized	-0.33 (0.09)	0.000
Categorization$_{tough-tender}$, standardized	0.24 (0.10)	0.007
Sex (0 = M, 1 = F)	-0.38 (0.19)	0.05
Constant	0.59 (0.32)	0.067

N = 95; R^2 = 0.26

But before we assume learning is occurring, we should keep in mind the stunning findings of Martin, et al.'s (1986) study, in which heritability dramatically dominates cultural transmission in its accounting for a majority of the social attitudes measured (in stark contrast to Converse's 1964 claim that it is "clear" that idea constraint is more a social than a psychological phenomenon). In this study English and Australian spouses and twins are used, and as in the case of Alford, et al (2005), Wilson-Patterson items are used. What is perhaps the most enlightening of all, especially in light of the findings presented in this dissertation, is that of dozens of items, only five demonstrate greater cultural attitude transmission than heritable…and *all are moral issues*. Four are quite sexual in nature: attitudes on "coeducation," "divine law," nudist camps, and pajama parties. And abortion attitudes also show stronger cultural transmission than most. Every single secular or nonsexual issue is estimated to have greater biological than cultural heritability.

At any rate, these results suggest that in future studies of the effects of cognitive-rigidity variables on opinion formation, a closer look at the role of political knowledge and sophistication in people's mapping psychology onto opinions promises greater understanding.

Chapter 10

Getting at causal order:
What happens when Categorization Strength is manipulated?

It remains to establish that categorization strength *causes* opinion formation. This can, of course, be established only by experimentally manipulating categorization strength and observing a resulting change in attitude.
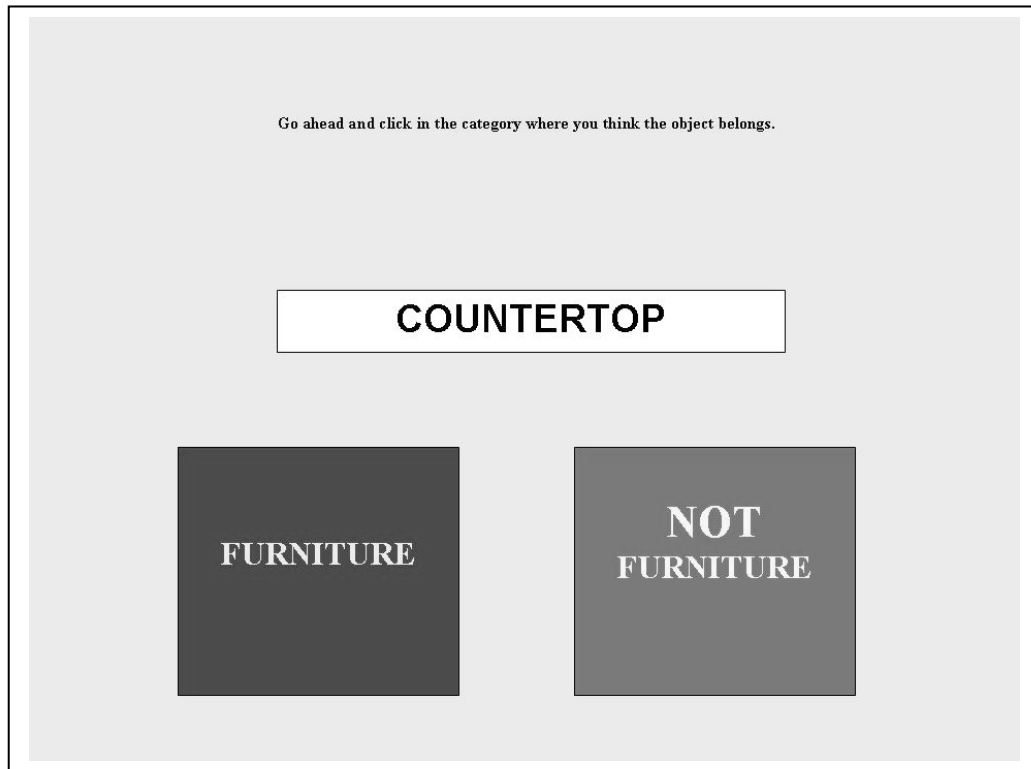
Although C-theory argues that categorization strength is extremely basic to cognitive functioning, I nonetheless hoped that it could be manipulated, even if only for a few moments—long enough to get people to think about a political issue while in their manipulated state, and long enough to have a perceptible impact on the ideological quality of their opinion output. As we shall see shortly, the manipulation I will describe does appear to have affected ideological output in a systematic way, but not quite in the predicted fashion.

The predicted fashion, of course, is that to the extent that I can cause people to "categorize more strongly," or habituate them to see the world in categorical or compartmentalized terms, they should express more recognizably conservative opinions than they "normally" would, so long as the temporary habituation lasts. By contrast, I should be able to "make people more liberal," temporarily, by getting them to see the world in *less* categorical terms. And so I also needed a manipulation to habituate people to "continuumize"—that is, to see objects and concepts not as belonging to categories, but as belonging on a continuum where everything is relative to everything else, but nothing belongs absolutely in a box.

The manipulation

The manipulation is essentially the categorization-strength-measuring task in reverse. Whereas, to measure categorization, participants were shown, typically, two boxes, with a line separating them, and invited to place items either in the boxes or click on the line, to manipulate people to categorize, participants were shown two boxes, separated not by a line, but spaced apart, much like the example shown in figure 10.1, an actual frame used in the manipulation. This time, there was no option to place items in between the boxes. Every item necessitated a razor's-edge decision: did it belong in the box on the left, or the box on the right? By presenting subjects with a series of necessary categorizations, and by having participants categorize a wide variety of objects, relationships and concepts that spanned different aspects of experience, I hypothesized, I could temporarily habituate people to perceive the entire world in more categorical terms.

Figure 10.1. A categorization habituation.

Go ahead and click in the category where you think the object belongs.

COUNTERTOP

FURNITURE

NOT
FURNITURE

In contrast with the categorization-strength measurement task, subjects were not under time pressure to make their decisions. This was because, if they were uncomfortable categorizing things which they'd normally perceive as on a continuum, I wanted them to have plenty of time to make a decision and, hopefully, arrive at the "realization" that everything indeed might be suitably placed into a category after all.

In an attempt to drive home the idea that virtually anything in the world could be categorized, before attempting to categorize any series of items into a pair of categories, subjects read an instruction similar to this one:

> While no object you will see is an *ABSOLUTELY PERFECT* example of either category, it is quite possible to determine whether *any object* really counts as furniture or not. You just have to be very clear about what is and what is not furniture.

Subjects assigned to the "categorization" condition saw only frames requiring them to categorize—they never underwent a continuumization manipulation. These manipulations were repeated throughout the survey, interspersed with political opinion questions and other psychological measures. This dispersion of manipulations throughout the survey was designed to address my suspicion that categorization was sufficiently "hard-wired" that the effect of any manipulation would be extremely

temporary. I have no data to indicate how ephemeral the manipulation in fact was, or whether I could have simply conducted a single manipulation early in the survey and allowed its effects to linger for the remainder of the hour.

All categorization-condition subjects encountered the manipulation at four separate times, spaced out throughout the survey. The different manipulations involved their performing the following categorizations:

1. Physical objects into the categories "furniture" and "not furniture"
2. Pairs of spatially-related objects into the categories "above-below relationship" and "not an above-below relationship" (see fig. 10.2)

Figure 10.2. The "above-below" manipulation
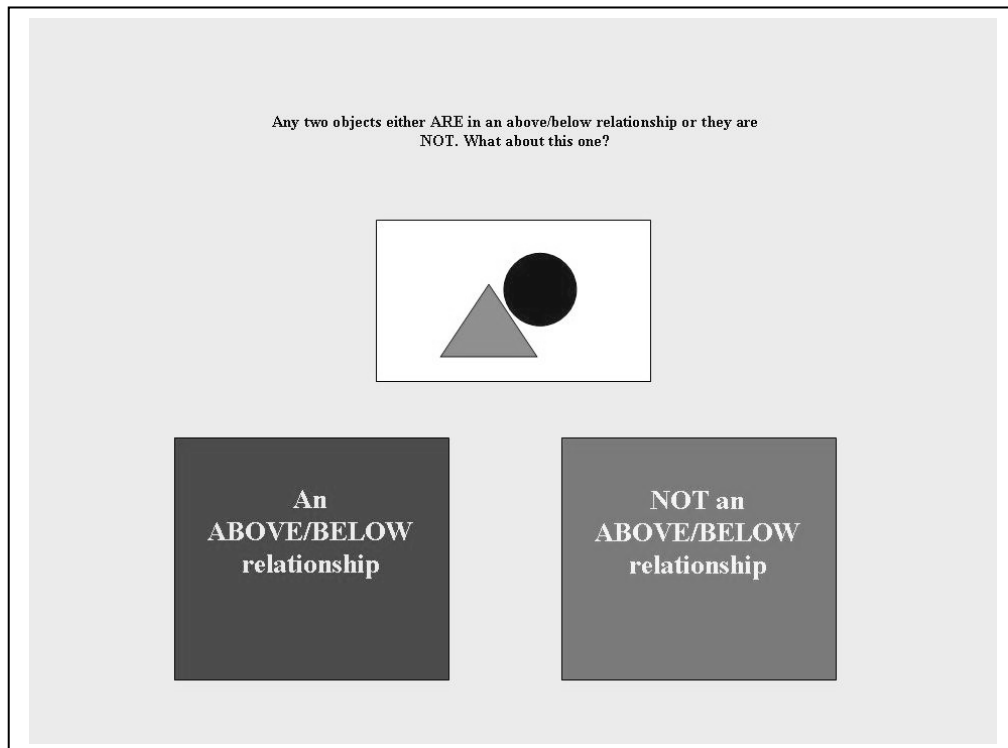
3. Event dyads into the categories "A is the cause of B" and "A is NOT the cause of B"
4. Relationships between people or objects into the categories "Dominant-subordinate relationship" or "Equal-to-equal relationship." See figure 10.3 for an example.
5. Physical objects into the categories "flexible" and "rigid"
6. Behaviors into the categories "characteristics of a good friend" and "characteristics of a non-good friend"

7. Briefly-described people into the categories "Someone I identify with" and "Someone I do NOT identify with" (for example, "someone who loves the opera")
8. Behaviors into the categories "morally OK" and "morally NOT OK"
9. A picture containing multiple objects, as being characterized mainly by "sameness" or mainly by "distinctness" according to how generally similar or distinct the different objects in the frame appeared. See figure 10.4 for an example.
10. Behaviors into the categories "things a superior does" and "things a subordinate does"

Items for categorization were chosen so that some would likely generate consensus as to their belonging to a category and some would pose a challenge, at least to individuals who were not inclined to categorize *everything* strongly and with ease. It was deemed necessary that some items pose such a challenge so that participants would come to an understanding, through performing the task, that indeed categorization could be applied to virtually anything in the entire world.

The opposite manipulation was dubbed "the continuumization manipulation." An example is shown in figure 10.5. For this manipulation, subjects were *not allowed* to categorize items, no matter how central to a category the object might seem. Instead, they were shown two categories at either end of a continuum which faded from purplish to a peach-like color as the eye pans from its left to its right end. The ends of the continuum displayed categories which represented idealizations that, according to my "instructions," no object or concept—at least none that the subject would encounter—could ever fully realize. Subjects in the continuumization condition were told, point-blank, during the instructions that "no object you will see is a perfect member of either category…. Your task is to click inside the shaded continuum to indicate approximately where the object belongs BETWEEN the categories."

The different endpoint categories, and the objects to be categorized, were the same as in the categorization manipulation. The difference was in the task itself.

Subjects who were not assigned to the categorization or the continuumization manipulation acted as a control group, and simply answered the various batteries of political opinion and psychological measurement questions without having been manipulated.

Because participants are expected to have some political opinions already, the effect of such an apolitical manipulation was expected to be miniscule, so to increase statistical power, the experimental design carried a within-subject aspect: I measured subjects' ideology using self-identification and a few opinion questions before performing the first manipulation. The straightforward analysis of experimental results, then, proceeds as follows: subjects' post-manipulation ideology, measured by additive scales, is regressed on a categorical variable indicating to which condition they were assigned, and on their pre-manipulation measure of ideology as a control.
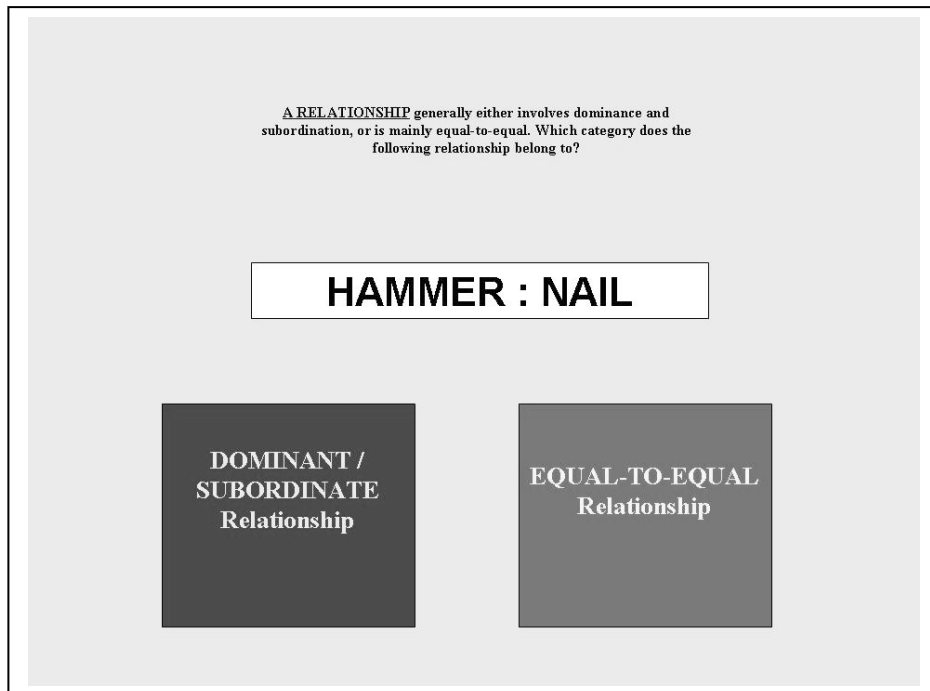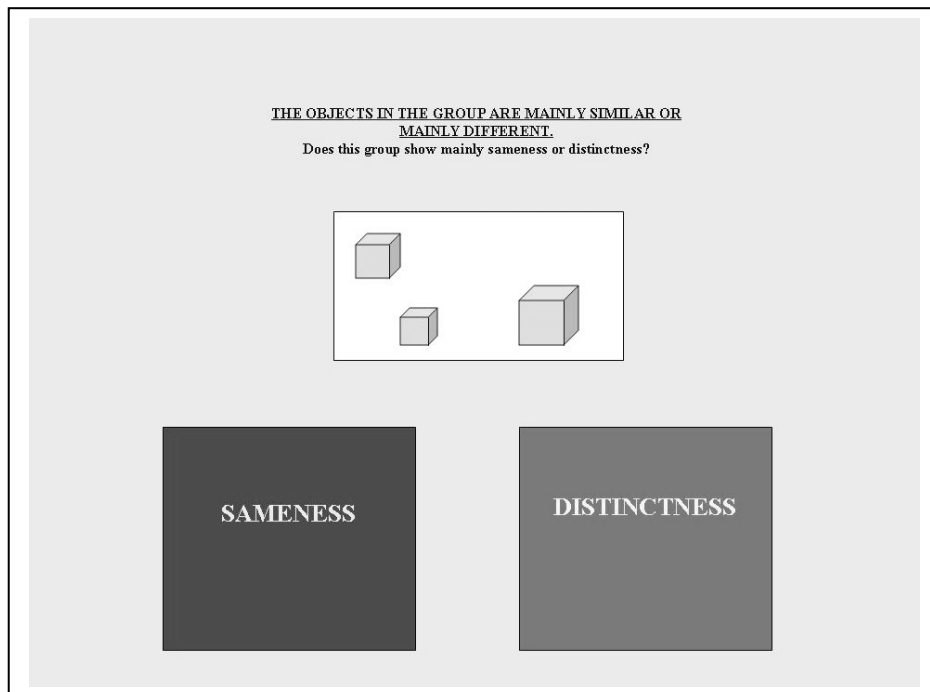
Figure 10.3. The "Dominant relationship" manipulation

Figure 10.4. The "sameness" and "distinctness" manipulation

This is, in effect, simply a regression that reflects the actual model of the data-generating process I expect to occur: the pre-manipulation measure should be a highly significant predictor of post manipulation ideology and should account for a lion's share of the variance in post-manipulation ideology. The conditions to which subjects are assigned should only account for additional, incremental variance.

Figure 10.5. The continuumization manipulation
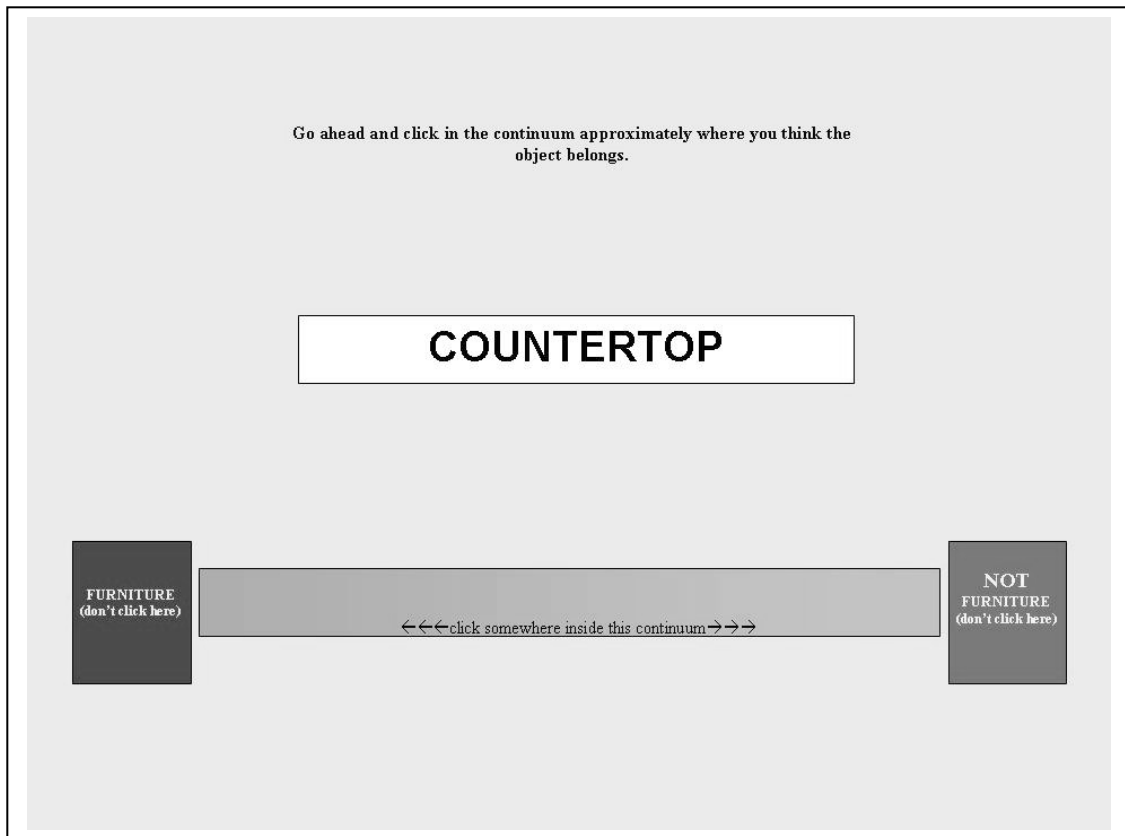
Results

155 extra-credit-receiving Stony Brook student volunteers were recruited for the experiment. 52 participants entered each of the categorization and continuumization conditions, At the end of the survey, as a manipulation check, a subsample (for time-saving purposes) of participants completed a shortened version of the categorization-strength measurement task conducted on Student Samples 1 and 2 and in the Tallahassee Adult sample. All of the control group (N=51) and half of each manipulation group completed this manipulation check. A one-way ANOVA confirms that the manipulations had a significant effect, $F = 4.32$, df = 2, N = 103, $p =$

0.016. Further investigation of the manipulation check reveals that each manipulation had the desired effect, such that the 26 manipulation-checked subjects in the categorization condition displayed *more* categorization strength than the control group did in the manipulation check, $p = 0.07$ one-tailed (OLS regression analysis not shown) and the 26 from the continuumization condition displayed *less* categorization strength, $p = 0.033$. If the control group is left out of the analysis entirely, the 52 manipulated and manipulation-checked subjects differed in categorization strength at the end of the survey in the predicted direction, $F = 8.94$, $df = 1$, $p = 0.004$.

Because the manipulation check is the original categorization-strength test from which the manipulations were drawn, and because therefore the manipulations are essentially the same task as the categorization-strength test, it is of course possible that this supposed confirmation that the manipulation "worked" is only a demonstration of a trivial practice effect rather than real evidence that subjects were induced to see the world in a different way. However, in light of the unexpected yet interesting substantive results of the experiment, while some practice effect may have occurred, I do not believe this is entirely the case.

For simplicity, having used the control group to confirm that the manipulation seems to have "worked," I wish to compare only the two manipulation groups. Let us see, then, whether having categorized versus having continuumized has a "conservatizing" effect.

An unfortunate aspect of this experiment is that, at the time of its design, I had not yet identified the "tough-tender" dimension of ideology as a separate dimension for study—a dimension which, especially among Stony Brook students, seems to be the most responsive to cognitive-rigidity measures. The "English-Only laws" question is the only question which, post-manipulation, falls in this dimension. So for the moment, I will look only at fiscal and moral ideology.

I measured pre-manipulation fiscal ideology by a scale of several issue questions as well as a question drawn from the Feldman economic individualism scale and slightly altered for my purposes, and a question drawn from an "economic communalism" scale which I constructed for this survey to act as a complement measure to Feldman's scale. This economic communalism scale I tried to scrub of the essence of measuring capitalism- or socialism-endorsement which I believe the Feldman scale contains, and I discuss the scale further in chapter 11. However, for the purposes of measuring ideology itself, it is immaterial whether either mine or Feldman's questions are ideological in tone. Alpha for the pre-manipulation measure of fiscal ideology was 0.73. The post-manipulation ideology measure was conducted in the same way but contained more questions, including again questions from Feldman's economic individualism scale. Its α was 0.77.

I then simply regressed post-manipulation fiscal ideology on pre-manipulation fiscal ideology and a dichotomous variable indicating whether the subject was habituated to categorize (1) or continuumize (0). The entirely null results are shown in table 10.1. In fact, the coefficient for the manipulation is signed in the wrong direction, indicating that being assigned to the categorization rather than the continuumization condition is associated with a 0.04-standard-deviation increase in

fiscal *liberalism*. However, the p – value of 0.802 is entirely consistent with no effect at all.

In fact, both manipulated groups shifted leftward relative to how the control group performed on the post-manipulation questions (which, for the control group, merely came later in the survey). But the two "manipulated" groups' combined shift to the left relative to the control group did not approach significance.

Table 10.1. Post-manipulation fiscal ideology by issue positions (standardized), OLS coefficients

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	-0.04 (0.15)	0.802
Pre-manipulation fiscal ideology by issue positions (standardized)	0.69 (0.075)	0.000
Constant	-0.01 (0.11)	0.902

N = 103; R^2 = 0.46

I investigated further to see whether perhaps there was some conservatizing (or liberalizing) effect of the first "round" of manipulations (recall, the manipulation was repeated four times throughout the survey). Perhaps the first manipulation "worked," but its effect "died out" or even became subject to backfire effects after further manipulations. I also checked for whether the effect was only perceptible after multiple manipulations—perhaps the inclusion of issue questions which were asked only after the first manipulation was diluting results. I checked separately for effects after the first, second, third, and fourth rounds of manipulations. In each case, the results were null.

However, there was something fishy about each of these four sets of results: in four out of four cases, the effect of the categorization versus the continuumization manipulation was small, but nonsignificantly liberalizing (βs = -0.003, -0.25, -0.05, and -0.01, p – values = 0.99, 0.15, 0.70, and 0.90). It appeared that for *each group of issues*—those asked after each round of manipulation—categorization versus continuumization produced a tiny liberalizing effect.

It was so tiny, of course, that it would be consistent with no effect. But it would also be consistent with an extremification effect in a sample that tilted liberal, as my northern student sample assuredly did (in a t-test of the null hypothesis that the mean self-identified ideology of the student sample was 0.5 where 0 was maximum

self-identified liberalism and 1 was maximum self-identified conservatism, $\mu = 0.37$, t =
-6.15, $p = 0.0000$). That is, the data so far suggested to me that categorization, versus continuumization, was driving my subjects to take on more extreme fiscally ideological views, depending on whether they saw themselves initially as liberal or conservative.

I further investigated this possibility by creating an issue-based "fiscal extremity" variable. Issue-based measures of ideology are already standardized to have mean 0 and standard deviation 1, so this measure was simply folded at 0, so that higher scores reflected more extremity, relative to the central tendency of the sample itself. This measure of extremity was calculated separately for the pre-manipulation fiscal ideology questions and the post-manipulation questions.

Next, I simply regressed post-manipulation *extremity* on pre-manipulation *extremity* and the dichotomous categorization-versus-continuumization manipulation variable. The results are shown in table 10.2.

Table 10.2. *Extremity* of post-manipulation fiscal ideology (as measured by issue positions), OLS coefficients

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.31 (0.16)	0.066
Pre-manipulation extremity of fiscal ideology by issue positions	0.68 (0.09)	0.0000
Constant	-0.13 (0.13)	0.323
N = 89; R^2 = 0.40		

Categorizing rather than continuumizing appears to have shifted subjects toward more ideological extremity. Obviously, being more extreme in the pre-manipulation measures accounts for most of the extremity in the post-manipulation measures. But categorizing rather than continuumizing is associated with an additional 0.16-standard-deviation shift toward more ideological extremity, approaching conventional levels of significance in a two-tailed test. If we look separately at the results for self-identified fiscal conservatives and self-identified fiscal liberals, we see that it is of similar magnitude for both, with self-identified liberals shifting 0.13 standard-deviations to the "extreme" (becoming more liberal) and self-identified conservatives 0.19 standard-deviations to the "extreme" (becoming more conservative) as a result of having categorized rather than continuumized.

Since I "found" this result after close inspection of the data, and since it was not predicted, this result must be replicated in future research before total confidence is placed in it. However, some additional information gives us some confidence that these results are not accidental or the result of a data-mining researcher. One trait-type measurement question embedded in the survey asked participants to rate themselves as to whether they "make decisions with confidence and don't look back." This seemed a plausible proxy measurement of the unwillingness of a person to change her mind. Subjects who were willing to change their minds should be more moveable generally, and hence more subject to manipulations. So I reasoned that subjects who *were* willing to "look back" would be more likely to shift to the extreme.

On the other hand, subjects who score higher in Openness to Experience should be generally more interested in alternative viewpoints, and hence should have a built-in psychological resistance to tribal or partisan extremism. Hence, subjects who are *lower* in Openness to Experience should also preferentially shift toward extremism.

That is, people who are both willing to change their minds and low in Openness are the ones who should become more extreme when categorizing. It might be objected that a willingness to change one's mind and Openness are alternate measures of the same thing, and that I am predicting here that the same measure will have alternate effects. However, a look at the embedded questions measuring Openness in this experiment (enjoying philosophical conversations, enjoying thinking abstractly, taking conversations to a higher philosophical level, looking for deep meaning in things) reveals that they are substantially different from a "decisiveness"-type question—which, at any rate, was included as an Extraversion measure. And indeed, the "decision with confidence" question was not significantly correlated with the Openness scale ($r = 0.09$, $p = 0.25$).

The effects of categorizing for that subset of participants who did not answer that it was either "accurate" or "very accurate" that they made decisions with confidence without looking back—that is, for those who do *not* rate themselves as decisive—are shown in table 10.3.

The result is strongly significant for this subset, leaving out approximately the most decisive half of the participants (by self-description). For the less decisive, theoretically most manipulatable half, categorizing rather than continuumizing is associated with a nearly one-third-standard-deviation increase in extremism, strongly significant. Incidentally, for the more "decisive" 43 subjects in the analysis, there was no difference between categorizers and continuumizers, ($\beta = 0.007$, $p = 0.96$).

The results of categorization are even stronger if we look at those subjects whose standardized Openness-to-Experience scores were less than zero—that is, roughly, the least open half of the sample. This is shown in table 10.4. Among the less open 40, categorizing rather than continuumizing is associated with nearly a full three-quarter standard-deviation increase in extremism.

Table 10.3. *Extremity* **of post-manipulation fiscal ideology among participants who don't agree that "I make decisions with confidence and don't look back," OLS coefficients**

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.65 (0.23)	0.007
Pre-manipulation extremity of fiscal ideology by issue positions	0.74 (0.13)	0.000
Constant	-0.18 (0.16)	0.270

$N = 46$; $R^2 = 0.48$

Table 10.4. *Extremity of p*ost-manipulation fiscal ideology among participants lower than sample mean in Experiential Openness, OLS coefficients**

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.75 (0.22)	0.002
Pre-manipulation extremity of fiscal ideology by issue positions	0.48 (0.14)	0.001
Constant	-0.42 (0.18)	0.028

$N = 40$; $R^2 = 0.37$

Furthermore, among the less decisive participants—again, those who did not respond with "accurate" or "very accurate" that they "don't look back"—categorizing and continuumizing provided results *against the control group* in line with a "categorization-is-extremifying/continuumization-is-moderating" hypothesis. That is, subjects who categorized became more extreme than those who were not manipulated, $\beta = 0.15$, $p = 0.20$, two-tailed ($N = 44$); and subjects who continuumized wound up more moderate than those who were not manipulated, $\beta = 0.20$, $p = 0.07$, two-tailed ($N = 50$). And among those scoring in the lower half on Openness to Experience, the result is the same: categorizers became more extreme than the

unmanipulated, $\beta = 0.21$, $p = 0.112$ (N=41), while continuumizers became more moderate, $\beta = -0.25$, $p = 0.115$ (N=33), both significance tests two-tailed.

I repeat that this experiment desperately needs to be replicated to alleviate concerns that these findings were "data-dredged" from essentially null results. However, the strength of the results suggests that something real is going on, and suggests it strongly enough that we must think about the possible nature of the phenomenon at hand. (It also suggests we can reject the hypothesis that the manipulation check was purely a practice effect.)

The most obvious possibility is that a real categorization effect is at hand, but that subjects, rather than applying categorization to their deliberations about issues—which theoretically would have caused them in the moment to think "more conservatively"—instead applied categorization *to themselves*. As much of the survey was ideological in nature, it is likely that subjects' ideological identities were activated if not fully in conscious awareness as they took the survey. If this was the case, then perhaps inducing subjects to categorize more strongly caused them to categorize *themselves* more strongly as conservative or liberal, in turn generating the extremity effect.

There is a crude way to test for this. Near the survey's end, I asked subjects to indicate their self-identified fiscal (and social and general) ideology again—this time on a 9-point scale rather than a 7-point scale to give myself a chance to detect subtle changes in self-identified ideology in response to manipulation. If self-identification has become purified or more extreme as a result of the categorization manipulation, or more dilute and moderate as a result of continuumization, then perhaps this will be reflected in an increased extremity in self-identification.

However, there is no evidence this occurred. Among the less decisive and less open, respectively, there was a 0.10 standard-deviation increase and a 0.02 standard-deviation *decrease* in the extremity of self-identification as a result of categorization versus continuumization, both ps > 0.4. If self-categorization as fiscally liberal or conservative was strengthened by categorizing, or weakened by continuumizing, either this effect never rose to the level of consciousness and somehow left self-identifications untouched, or the effect itself had dissipated by the time subjects confronted this final question. It is plausible that post-manipulation self-identifications were untouched precisely because the question had already been asked before the manipulation, effectively "fixing" subjects' self-identification as liberal or conservative.

Alternately, the extremification effect might have nothing to do with self-categorization. For there is another possible mechanism for driving the categorization-produces-polarization effect: certainty. Habituating categorization could induce a kind of generalized certainty, perhaps by temporarily, and probably subconsciously, altering the pool of considerations that impinge on an opinion generated in response to a survey question. This mechanism would be quite similar to the Zaller-Feldman mechanism (1992) in which considerations are sampled stochastically from a pool of considerations favoring either side of the issue. A slight difference: while the Zaller-Feldman model seems to suggest *conscious* sampling of

considerations, this model would hold that any consideration that impinges on an opinion generation, whether a related fact, a valenced liking or disliking of a group, a value, a pre-existing attitude—could influence the opinion not only consciously but subconsciously via a conceptual associative network. When categorization is high, such associative networks contract—become more "compartmentalized." This essentially amounts to an argument that certainty itself is largely a result of less permeable walls around a category, or a "compartment of considerations." How certain one is about what one sees, moment to moment, depends on how "categorized" the world looks at that moment.

The experimental result—polarization as a result of categorization—would be a consequence of enhanced certainty about opinions *already held*. As the branching "tree of related considerations" was pared down by categorization (as opposed to temporary new branches connecting to less-related considerations in response to continuumization) liberals' pool of impinging considerations would become more monolithically liberal, and they'd become more certain, temporarily, of their liberal opinions.

But haven't we just seen a plethora of results implying that enhanced certainty should always lead to more conservatism? Yes, but when participants are *not* taking an overtly political survey, enhanced certainty would not apply to political opinions, but to everyday objects, relations, and concepts. This indeed could result in higher levels of conservatism, especially secular conservatism. To use an economic example, where an individual who has invented a product and received a handsome sum of money as a consequence, and where categorization strength has been experimentally enhanced, a participant—even a liberal one—might be more "certain" that his sum is deserved and just, a judgment verging on fiscally conservative thinking. But this wouldn't happen if we've been asking that individual about his political opinions (and his ideological identification). In that case, what will appear more certain is the correctness of liberalism.

This hypothesis about the effect of the categorization/continuumization manipulation, quite obviously, requires a good deal of empirical validation. At the moment it is speculative. Future iterations of the experiment might want to avoid questions about people's liberalism or conservatism, and focus instead on their American-ness, or their membership in the community of "law-abiding" people or of people who "work for what they get." It's consistent with these results, but by no means guaranteed, that if these are the concepts that are made salient, participants who are required to categorize will adopt attitudes more consistent with a firmer membership in these desirable in-groups and more hostile to their respective outgroups, while participants who continuumize will do the opposite.

Moral ideology

There is, of course, the question of how the manipulations may have affected moral ideological thinking. As with fiscal ideology, pre-manipulation and post-manipulation scales were constructed to measure moral ideology, with the pre-

manipulation scale having Crohnbach's α of either 0.76 or 0.61, depending on which of two groups of questions subjects answered prior to the manipulations.[1] The post-manipulation scale had α of 0.80.

Running the same regression as was performed for fiscal ideology—regressing post-manipulation moral ideology on pre-manipulation moral ideology and the dichotomous categorized/continuumized manipulation variable yields a null finding, but one whose sign is consistent with original predictions—that is, categorizing versus continuumizing, if it had any systematic effect at all, pushed people to become slightly more morally conservative. The effect is not significant, however, as table 10.5 shows.

Table 10.5. Post-manipulation moral ideology by issue positions (standardized), OLS coefficients

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.104 (0.098)	0.291
Pre-manipulation fiscal ideology by issue positions (standardized)	0.46 (0.04)	0.000
Constant	-0.06 (0.07)	0.378

N = 103; R^2 = 0.49

If the regression is run only for self-identified "social" liberals, the result is stronger, $\beta = 0.19$, $p = 0.11$ N = 68, weakly suggesting moral liberals who categorized became more conservative than moral liberals who continuumized. But for self-identified moral conservatives, there was no substantive difference between categorizers and continuumizers and the coefficient on categorization-versus-continuumization was signed in the wrong direction, b = -0.03, $p = 0.84$. These findings are, it must be admitted, quite consistent with no effect at all.

Based on the results of the fiscal-ideology analysis, however, I investigated further to see whether those who are predicted to be more prone to change their position might have been more strongly affected by the manipulation. For those who rated themselves as *not* decisive on the "decisions with confidence" question, the coefficient for categorization-versus-continuumization barely changes (to 0.09) and becomes less significant ($p = 0.38$) as the sample size drops from 103 to 57.

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[1] Halfway through the data-gathering process, I altered some of the pre-manipulation moral ideology questions. The two scales were standardized and combined to form a single pre-manipulation moral ideology measure.

Looking at high- and low-Openness participants yields an interesting if rather data-dredged outcome: for the higher-Openness half of the sample, categorizers did shift in a more morally conservative direction relative to continuumizers enough to reach conventional significance, as table 10.6 shows.

Table 10.6. Post-manipulation moral ideology by issue positions (standardized), OLS coefficients, more "Open half" of sample

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.24 (0.11)	0.050
Pre-manipulation fiscal ideology by issue positions (standardized)	0.58 (0.05)	0.000
Constant	-0.17 (0.08)	0.034

N = 54; R^2 = 0.70

As a check, I made sure both the categorizers and the continuumizers shifted relative to the control group in the expected directions. They did: categorizers were 0.076 standard deviations more conservative than the control group as a result of having been manipulated (versus not being manipulated), and continuumizing appears to have effected a 0.11-standard-deviation shift toward moral liberalism relative to the unmanipulated control participants.

We should not put any stock whatsoever into these results as applied to conservatives. Only 10 self-identified moral conservatives were among the 54 subjects who fell into the regression analysis of table 10.6. There were 4 moderates and 40 self-identified liberals. Among these 10 conservatives, categorization relative to continuumization "produced" a 0.05-standard-deviation shift toward liberalism, not even close to significant. Among these 40 liberals who were also especially "Open," categorizers were 0.35 standard deviations more shifted toward moral conservatism than continuumizers, $p = 0.01$. In at least a slight congruence with the fiscal-ideology result, the more closed-minded liberals in the sample—28 of them—reacted to categorization or continuumization as fiscal liberals did: categorization produced relatively, but nonsignificantly, more liberalism.

Is this a real effect? It took an awful lot of interactions to get to this small subsample, and I would place little confidence in it. Perhaps, though, a replication attempt in future research is worth the effort.

Summary

At very least, we can probably say that there is decent evidence that categorization strength has *some* sort of effect on attitude outputs, although the experiment alone does not tell us by what psychological conduits. The experiment also fails to tell us what effect years of chronically high or low categorization strength might do, or whether such states would have effects different from an acute high- or low-categorizing condition. It's certainly reasonable to suspect that the effects of the experimental manipulation would be different from chronic categorization strength.

At this time, the best I can say is that, if cognitive-perceptual Categorization Strength is a causally important force in cognitive style and, ultimately, opinion formation, then *chronic* categorization strength (assuming that's what the basic categorization task measures) certainly appears to have different and more global effects than *this particular temporary manipulation* of it does. Further attempts to track the possible effects of such manipulations on attitude outputs will have to be conducted in the future to better establish whether categorization strength actually is the causal dynamo I originally theorized it to be, and whether attempts to manipulate it temporarily can ever be made to produce the kinds of effects that chronic categorization strength appears to have. Without this additional evidence, C-strength will remain one variable among many in the cognitive-flexibility-rigidity constellation, but will not attain its hoped-for causally privileged status.

A curious postscript

There is one further result to report. This experiment included the "balanced budget" question, which gauged the extent to which participants preferred an absolute commitment to a balanced budget versus counter-cyclical spending by government. In previous samples, this question failed utterly to distinguish conservatives from liberals and never scaled with any ideological measure. However, there's no question that, at least colloquially, a strong preference for balanced budgets is associated with "fiscal conservatism." It's worth reporting, then, that amid all the failures to achieve straightforward, categorization-to-conservatism results, answers to this one question responded to the categorization/continuumization manipulation quite strongly, and very much as though strong categorizers indeed prefer balanced budgets. Controlling for pre-manipulation self-identification as fiscally liberal or conservative (which had no effect), categorizing rather than continuumizing is associated significantly with a more conservative position on the 4-response-option balanced budget question in ordered logit analysis, shown in table 10.7. In an idiosyncrasy of the survey design and my efforts to keep length down, "balanced budget" was not asked of any member of the control group.

Whether or not this shows that preference for balanced budgets really is somehow more inherently "conservative," I am not willing to say based on this one result, but it is rather intuitively pleasing. Take it for what it's worth.

Table 10.7. Post-manipulation balanced-budget preference, ordered logit coefficients

Independent variable	Coefficient (standard error)	p – value (two-tailed)
Manipulation (0=continuumized, 1=categorized)	0.85 (0.37)	0.022
Self-identified fiscal liberalism-conservatism (0 to 1)	0.036 (0.12)	0.772
N = 103; pseudo-R^2 = 0.02		

Chapter 11

More explorations from the experimental study, part 1:
New variables

      While the experiment reported in the previous chapter was the main usage of the time its subjects spent in the data lab, a number of other measures were embedded in the survey they took. This chapter and the next report on some results obtained from these additional measures gathered.

      In this chapter, I report non-experimental results from the experimental session that speak mainly to points already made, to theory and hypotheses which have already been introduced and supported. The next chapter will introduce new theory, some ideas that occurred to me during the course of research, and bring preliminary evidence to bear on these ideas.

      Experimental subjects answered a wide variety of issue-position questions for the measurement of ideology, just as previous subjects did. And because the categorize/continuumize manipulation did not systematically make all subjects more liberal or more conservative, and because, even to the extent that the manipulation did affect attitude measurements, the effects were extremely small, I considered that both pre- and post-manipulation measurements of issue positions were good indicators of a person's chronically held ideological positions. Based on this assumption, I created scales of fiscal, tough-tender and moral ideology using pre- and post-manipulation issue questions together.

      The scales' reliabilities were good, suggesting that indeed combining pre- and post-manipulation questions into scales still resulted in reliable measures of participants' left-right ideology on these dimensions. Into the fiscal ideology scale went the following items: (1) support/opposition for taxing the rich to help the poor; (2) fairness of income tax; (3) support/opposition to government intervention in the economy; (4) support for unilateral/multilateral foreign policy; (5) Whether government should see that people have a guaranteed job, a slightly altered National-Election-Study question; (6) self-identified fiscal ideology, asked before the manipulation; and (7) self-identified fiscal ideology, asked after the manipulation. Additional questions were included in the scale this time, mostly written by me, and were:

      (1) a question asking whether "society should take a pro-active role in helping its less fortunate citizens—and actually helping everyone—to improve their lives by providing ample services, such as education, financial and food assistance, job training, child care, and others, through government"; or whether "government should let each individual make it on his or her own" since "giving an individual too

much help for free makes a person lazy and less likely to take responsibility."

(2) a question asking whether poverty was "our problem collectively" such that government should take an "active role in alleviating poverty"; or "a problem that's primarily faced by those individuals who are poor," so that "society can't face" poverty for such an individual, and "only an individual can truly lift himself out."

(3) an expanded and altered version of the public-versus-privatize healthcare question.

Crohnbach's alpha for the fiscal ideology scale was 0.83.

For tough-tender ideology, the questions used were all previously used, and addressed the death penalty; English-only laws; crime; immigration; and the belief that military spending should be kept up regardless of economic circumstances. α for the tough-tender scale was 0.66.

For moral ideology, mostly previously-used questions made up the scale: gay marriage, Ten-Commandments, alternative lifestyles, abortion, physician-assisted suicide. However, a new item was added gauging subjects' support or opposition to an official prayer to be recited daily in public schools. α for the moral ideology scale was 0.74.

New variable: Schwartz Values

It was always likely that someone, at some point, would ask, "what role do values play in all this?" Values are commonly understood as preferences for general end states (Feldman 2003). Some have suggested values mediate between traits or other measures of personality and ideology. This largely seems to be the approach taken by Caprara et al. in a 2008 paper showing among other things that voters' own values "trump" their traits in predicting votes. A model following this logic would hold that cognitive flexibility or rigidity "causes" a broad end-state preference; in turn, people would consult these standing end-state preferences when deciding their stances on new issues.

There are reasons, however, not to treat such a model too seriously. First, most values are "positive"—all else equal, people want "more" of most of them, and it's value *priorities,* or relative emphases, which we measure with typical questionnaires designed to probe Schwartz's values (1992). It's less clear how cognitive rigidity would "cause" a broad end-state preference when even people with high cognitive flexibility also consider that end state a good one. And the second a rigidity-to-values-to-policy-position model might be a dubious one is that there is evidence suggesting that value priorities can shift fluidly within an individual.

We should further not make too much of values as a carrier of causal forces from cognitive style to ideology because Schwartz's values, the ones most commonly cited in values research, are strongly ideological in and of themselves. By their very definition—end-state preferences—it's hard to argue values, or their priorities, can be anything other than ideological. Let us consider some of the items that comprise measurement of the value Universalism. Subjects are asked to rate the importance, to them, of the following: equality (explained as "equal opportunity for all,"); social justice (explained as "correcting injustice, care for the weak"); broadmindedness (explained as "tolerant of different ideas and beliefs"); a world at peace (explained as "free of war"); and even protecting the environment.

This does not sound to your humble author like a mediating variable that stands a good chance of "causing" liberalism. *This sounds like liberalism itself.* Or, perhaps we could say, it sounds like a generalized version of liberalism that is not yet instantiated in any narrow policy prescriptions. But a great deal of policy is surely utterly mandated by this value orientation, and it's hard for me to imagine that anyone would take seriously a claim that a Universalism-liberalism correlation had accomplished much in the way of *explaining* liberalism.

Perhaps a better model of flexibility-causing-liberalism, then, would simply regard values as potential measurements of ideology itself, as expressed in generalities and end-state inclinations, rather than in particular laws. That is, when deciding a position on crime, people need not first consult their values. Rather, people just think about crime—but their values are a good measurement of the general *nature* of the kinds of positions they are likely to generate, given their cognitive style, on any issue position, including crime. This would not mean their values "caused" the position, however, any more than that their other policy positions caused it.

This view holds that, in a causal pathway analysis, values may be simply temporally simultaneous with policy positions. Values, in a sense, *are* policy positions, perhaps stated in more general language. It is possible, of course, that people may still consult their values to help them decide new policy positions. But it's also likely that (a) they will "discover" their values, upon such consultation, from policy positions they already hold, or may otherwise *induce* what their values are from more specific bits of self-knowledge, such as the knowledge that they have felt warmly toward the poor in the past, and (b) that, as suggested in the previous paragraph, people may simply consult other equally specific but related policy positions in formulating new ones, without necessarily passing through some generalized recognition of a broader *value*.

I am arguing, then, that values are not separable from attitudes and opinions for the purposes of building causal models. However, even if we don't believe values represent good causal mediators, this doesn't mean that interrelationships between cognitive style indicators and ideology *as measured by values* is not illuminative of the overall subject of ideological thinking. It is worth seeing whether categorization or other cognitive-style indicators are related to values, and whether these relationships mainly mirror or look different than the relationships between ideology and specific issue positions.

Due to survey-length considerations, I did not measure all Schwartz values, and I also used items from the "Short" Schwartz Values Survey (SSVS; Marjaana and Verkasalo 2005), a validated instrument which measures individuals' emphasis on the 10 Schwartz values with a single item per value, with that item making mention of a variety of "components" of the value. For example, to measure Universalism, my version of the SSVS item asks,

> Please rate how important in your life is the principle of UNIVERSALISM—that is, broad-mindedness, beauty of nature and arts, social justice, a world at peace, equality, wisdom, and unity with nature.

and asks subjects to answer on a 7-point scale ranging from 5 to -1, where 5 is labeled "Universalism is of SUPREME importance to me," 0 is labeled "Universalism is NOT important to me," and -1 is labeled "Universalism is actually OPPOSED to my life principles" (one participant in 81 offered this response). All the values items are shown in the appendix to this chapter.

I measured the four Schwartz values I guessed would be most related to ideology—Universalism, Power, Achievement, and Conformity. I also measured people's interest in "Victory"—not a Schwartz value, but a concept I am interested in for reasons I'll discuss later, and measured this using the SSVS format, asking subjects to rate the importance of "VICTORY—that is, fighting and winning battles, competitiveness, defeating people who stand in your way, and seeing life as a series of battles to be won."

New Variables: Economic Individualism and Economic Communalism

If values are too close to ideology to be seen as mediators, so might be Feldman's (1983) measure of economic individualism, but for reasons similar to those expressed above for values, I thought it would be illuminating to see whether cognitive-rigidity measures are as strongly related to individualism, and in the predicted directions, as they are to issue-based measures of ideology. Such a finding would continue to build confidence in the general ideas promulgated in these pages. I very slightly altered the wording of some of Feldman's questions simply to make sure that they were not accidentally measuring opposition to socialism or communism.

I also wondered whether there might be a tendency to "see problems as having communal, rather than individual, solutions" that was not exactly diametrically opposite individualism, or might behave differently in analyses, and so based on many of Feldman's questions, I developed a short scale of "economic communalism," designed to measure individualism from another, mainly "reverse," angle. These items always mention the surrounding community and gauge the extent to which people see their efforts, successes and failures as distributed or integrated with those of others.

The Individualism scale was reliable, and the Communalism scale was verging on reliable (α = 0.72 and 0.60, respectively), and as one would expect they were highly correlated (r = -0.55, p = 0.0000, N = 154). Not shown, exploratory factor analysis indicated that a single factor was most parsimonious, but a two-factor extraction with promax rotation did "find" the two separate factors, exactly as they were designed, with only one exception—a particular Communalism question loaded more strongly on the individualism series of questions. I leave that item in the Communalism scale for which it was designed here, however. The wording of these items is shown in the chapter appendix.

New Measures of Categorization Strength

In the experimental survey, I use two measures of categorization strength, neither of which is identical to the categorization task of the first three samples.

It's true that a subsample did perform an abbreviated version of the original categorization task as a manipulation check. But recall that this check indicated people's performance on this task *was, in fact, successfully manipulated*. Since, in large part, ideology was not manipulated, but performance on this task was, it is expected that the manipulation check would *not* strongly correlate with ideology, so I do not use the manipulation check as a measure of categorization strength.

One measure I *do* use, however, is a post-experimental question. After subjects had been required to categorize as a manipulation, they were asked, "how often did you WANT to place…objects somewhere between the categories, or somewhat in both categories simultaneously, even though you were forced to make precise categorization decisions?" and were offered five response options, ranging from "Almost every time" to "Almost never." Likewise, subjects who had been assigned to the continuumization condition were asked how often they had wished for a chance to fully categorize items.

Responses to these two questions were separately standardized so that they would have the same mean and variance, the continuumization measure was flipped so that "more categorization preference" was positive, and they were then combined to form a "stated preference for categorization" measure.

There is another measure of categorization embedded in the experiment, and this one is perhaps more interesting. During the categorization manipulation, subjects' reaction times, in milliseconds, were recorded, so I had a record of how long it took subjects to decide to which category an item belonged. According to C-theory, this should perform as a kind of "implicit categorization" measure. People who perceive the world already in categorical terms should have an easier time choosing a category—or, perhaps more accurately, weak categorizers should have trouble deciding—so strong categorizers should have shorter reaction times to the manipulation's demand that they categorize things sharply. Each subject who was assigned to the categorization condition, then, was given a "reaction time" score which was simply the average reaction time across all the categorization-manipulation trials, with reaction times longer than 10 seconds excluded. Then the

natural logarithm of this score was taken to handle the probability that longer reaction times—say 6 versus 3 seconds—were not substantively different from one another.

This categorization measure can function as a kind of "implicit" one, since it is implausible that people who were assigned to categorize things could have adjusted their reaction times by only a few milliseconds in order to reflect a conscious decision to appear to be strong or weak categorizers, or that people could even have been aware of their reaction times, as subjects were not told their reaction times were being measured or that they mattered in the slightest degree.

Theory does not similarly predict that reaction times to the continuumization task would be faster or slower for strong or weak categorizers. Presumably, weak categorizers would be more "comfortable" with the task since continuumization is "how they see the world." But since continuumization is a less "decisive" activity, there's no prediction that "weak categorizers" will necessarily make continuumization decisions quickly. Indeed, it's possible they will take their time regardless of whether they are presented with a categorization or a continuumization assignment. Hence, only subjects in the categorization condition were given "Implicit categorization by reaction time" scores.

Other variables of interest

In addition to ideology measures and the new additions of values, individualism and communalism, and new categorization measures, we will consider at this time some previously-used psychological measures: the trait and traitlike Big-Five Openness and Ambiguity Intolerance, and the more cognitive-flavored deliberative complexity and attributionism, the latter of which was measured here with the previous 5 items, and a new, sixth item, added to ensure a balance of three "good" and three "bad" behaviors explained alternately by trait attributions or situationally. In this new item, "Suzanne, who loves junk food and never enjoyed working out before," has gotten herself in excellent physical condition by eating well and frequenting the gym, and subjects are asked to explain this either by her being "a person with strong willpower" or via a situation in which Suzanne has found, for the first time, that this lifestyle is more enjoyable and easier than it had been before.

Results

I have no explicit causal model in mind here, and many of these measures were administered only to subsamples. So what I wish to do is to simply present zero-order correlations between these different variables, and then step back (and invite the reader to do the same) and ask what insights are available, and particularly whether we see general confirmation of the ideas of the dissertation. I present the gigantic, intimidating table 11.1, in which all these variables are arrayed against each other. Prepare for your eyes to glaze over.

First a few explanations. No nonsignificant correlations or correlations below 0.15 are shown, to save eyestrain. Next, I use one-tailed t-tests because there is a clear

directional prediction for every cell, with one exception, which I'll discuss momentarily. In general, among values, more Universalism should be associated with more liberalism, more open-mindedness, and lower categorization strength. Power and Achievement values should be associated with conservatism and its usual psychological-variable correlates, as is also the case with value Conformity. Stronger categorization and more cognitive rigidity should be associated with conservatism and with individualism, and opposed to Communalism. All significant correlations that are in the wrong direction appear in white numbers against a black background for quick identification. For these cells I performed two-tailed tests of significance.

There are lots of correlations, so have a good look at the table for a while, and then allow me to offer the following observations. First, all four values have much to do with ideology, but Universalism in particular seems a strong proxy measure of ideology, and it's the only value which significantly predicts all three dimensions and the two pseudo-ideologies, Individualism and Communalism, as well. The value-ideology correlations are so high as to suggest that, yes, Universalism (and possibly the other values as well) surely acts largely as a proxy measure for ideology itself. The second observation I want to offer is that the reaction-time measure of categorization strength—quicker logged times are presumed to indicate "higher implicit categorization strength"—is, considering how noisy a measure we'd expect it to be and the fact that only a subsample of the participants were measured, a surprisingly successful variable. Quicker reaction times are significantly associated with lower emphasis on Universalism and with high emphasis on power, both of which lead to conservatism, especially (as usual) of the non-moral variety. The reaction time measure also significantly predicts the cognitive process variables in the predicted directions: faster reaction in categorizing things predicts commission of the fundamental attribution error and lower levels of deliberative complexity, which again suggests faster reaction times should be associated with more conservatism (again, non-moral particularly; note that the cognitive process variables only predict tough-tender ideology.)

And, indeed, faster reaction times *are* significantly associated, directly, with fiscal and tough-minded conservatism. However, in what would have been a surprise when this project was begun but is simply no longer surprising, *moral* conservatism is just-significantly associated with *slower* reaction times. The story that has unfolded clearly points to a conclusion that pure cognitive categorization strength is much less associated with moral ideology than with other dimensions. Moreover, I have suggested that theory should be updated to predict that moral conservatives, while possibly evincing slightly stronger categorization on certain tasks, are different from other kinds of conservatives in that they are *driven to seek strongly categorizing leaders* (and I will investigate this hypothesis at least preliminarily in the next chapter). They, unlike secular conservatives, may truly have a *need* for certainty, closure, disambiguation, and so forth. This can certainly be found in religion, and may even be *conditioned* by a strongly religious upbringing. In other words, they have a need for what fiscal and tough-minded conservatives come by naturally.

Table 11.1. Intercorrelations of several nonexperimental variables from the experimental dataset

		Values				Traits		Categorization		Cognitive process		Pseudo-ideology		Ideology	
		Universal-ism	Power	Achieve-ment	Con-formity	Big-5 Openness	Ambiguity Intolerance	Cat. by react. time	Stated pref./cat.	Attribution-ism	Delib. Complex.	Feldman Indiv.	Econ. Communal	Tough-tender	Fiscal ideo.
Values	Achievement		.55*** (81)												
Values	Conformity	-.21* (81)													
Traits	Big 5 Openness			-.24* (81)	-.36*** (81)										
Traits	Ambiguity intolerance		.39*** (81)	.24* (81)	.29** (81)	-.37*** (154)									
Categorization	Implicit cat. by reaction time	-0.26† (40)	.25† (40)												
Categorization	Stated preference for categorization	.23* (81)			-.19* (81)	-.18* (154)		.43*** (74)							
Cognitive process	Attributionism							.17† (74)							
Cognitive process	Deliberative complexity				-.18† (81)		-.16* (154)	-.29** (74)	-.28*** (154)	-.23** (154)					
Pseudo-ideology	Feldman individualism	-.41*** (81)								.15* (154)	-.14* (154)				
Pseudo-ideology	Economic communalism	.36*** (81)	-.34** (81)	-.29** (81)				-.26* (74)		-.22** (154)	.19** (154)	-.55*** (154)			
Ideology	Tough-tender ideology	-.50*** (81)	.28** (81)	.36*** (81)	.35** (81)			.21* (74)		.30*** (154)	-.18* (154)	.19* (154)	-.31*** (154)		
Ideology	Fiscal ideology	-.64*** (81)	.30** (81)		.18† (81)			.21* (74)				.51*** (154)	-.48*** (154)	.51*** (154)	
Ideology	Moral ideology	-.44*** (81)			.45*** (81)	-.33*** (154)	.33*** (154)	-.18† (74)				.15* (154)		.14* (154)	.22** (154)

† $p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$. All tests one-tailed except the two dark cells, because those coefficients are in the wrong direction

Here, it appears that this need may, in fact, be associated with a fundamental psychological *lack* of certainty, which, through sufficient training, may be replaced with a learned or manufactured certainty. While in explicit tests moral conservatives might appear more certain, measured at an implicit level, a prediction that they are *slower* to make distinctions might not be an absurd one. Note that the one motivational variable we have, Ambiguity *Intolerance,* quite strongly predicts moral conservatism (and no other dimension here, in a contradiction of previous datasets).

For the moment, I think what we can say about moral conservatism, based on the overall findings of the entire study, is that there is a strongly motivational quality to the moral conservatism-rigidity/certainty link that does not so strongly color the explanations of fiscal and tough-minded conservatism—a result which reads nicely with the theory of the Jost (2003) team. For the secular conservatives, being quite certain of how the world appears to them is not something they long for; it is something they have, and we've seen quite a lot of empirical support for this. If anything—and this is shocking given the consensus in our field that the psychology of moral conservatives is so well understood while fiscal and other forms of conservatism aren't even related to psychology—it would appear that a good deal of light has been shone on the functioning of non-moral forms of ideology, while moral ideology has been largely left as a mystery not solved by these variables. For it, we are largely left to Jost's theory.

It remains to discuss the other "wrong" finding (besides finding slower reaction times for moral conservatives). Categorization strength, when measured by participants' stated level of comfort with having been required to categorize or continuumize after the experiment was completed, is related in the wrong direction with the value Universalism. This is not a result of participants in only the categorization or only the continuumization condition. In other words, people high in Universalism were both more comfortable categorizing than low-Universals, and were more *uncomfortable* continuumizing than low-Universals, both rs > .20.

I have little to offer as an explanation for this. The stated-level-of-comfort measure of categorization is strongly correlated with the implicit categorization measure, which gives us some confidence that both variables are tapping something similar. But it must also be noted that this stated preference for categorization is a relatively poor variable in our analysis. The implicit measure is more impressive in its ability to predict ostensibly unrelated political and psychological variables. The stated preference variable predicts few other variables, but when it does predict variables other than Universalism, it's in the right direction—even when those variables are also related in the "right" direction with Universalism. The overall picture is consistent with this anomaly's being the result of sampling error, but I will not assert that; I will concede this one finding to the camp of those who would argue that categorization strength and cognitive rigidity in particular have little to do with ideological thinking. We can simply place it against the weight of the rest of the evidence.

The variables I'm calling "pseudo-ideology," Feldman's Economic Individualism and my own Economic Communalism, do in fact look like good proxy variables for ideology, and particularly for fiscal ideology. If, instead, we consider them potential mediators between psychology and ideology (a tenuous assumption), then there is some evidence that some of the effect of implicit categorization is mediated through communalism (though not individualism) to affect ideology, Sobel statistic = -.10, $p = 0.09$, with 36% of the effect of implicit categorization mediated for tough-tender ideology, and Sobel statistic of -0.23, $p = 0.04$, with 65% of the effect of implicit categorization mediated for fiscal ideology—though keep in mind that economic communalism may not be meaningfully distinguishable from fiscal liberalism.

Taking a step back, do the correlations, overall, support the general ideas of this dissertation? Quite clearly they do. Stronger categorization appears, once again, to be related to a more mechanical, lower-deliberative-complexity cognitive processing style which understands the world through simple trait attributions rather than situationally. Both strong categorization and these more rigid cognitive processes are, once again, significantly related to tough-minded conservatism, and categorization strength is additionally related to fiscal conservatism.[1] And although the cognitive process variables aren't significantly related to fiscal ideology (r coefficients are in the right direction), they, along with implicit categorization, *are* related exactly as predicted to the "pseudo-ideologies," which can easily be seen here as quite good proxy measures for fiscal ideology.

And while it's disappointing that we failed to replicate the strong finding from previous datasets that Ambiguity Intolerance and Openness are directly related to fiscal and tough-tender ideology, those trait variables *are* strongly related to value priorities which in turn are strongly predictive of, or even proxies for, fiscal and tough-tender ideology—power and achievement especially.

In short, other than one inexplicable finding (that value Universalism is positively related to one categorization strength measure), and one minor surprise that perhaps should not have been so surprising (that moral conservatives are slower to categorize objects than moral liberals are), the non-experimental findings of the experimental survey provide yet another confirmation that cognitive rigidity and flexibility measures, of which categorization strength—to which we now add a reaction-time measure—is an important contributor, comprise a broad cognitive-style phenomenon which predicts ideology in multiple dimensions, tough-tender and fiscal most strongly. Additionally, there are further hints (but by no means confirmation)

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[1] Furthermore, we can put to rest any notion that conservatism is related to trait attributionism only because conservatives see *bad* behavior as the result of negative traits: the attributionism series consisted of three positive and three negative behaviors, and tough-tender conservatism was more strongly related to an attributionism measure comprised only of the three positive behaviors than to an attributionism measure comprised of the three negative behaviors, although it was related in the "right" direction to both.

that the relationship between the "Openness/Closedness" dimension of psychology and moral ideology is a special one, one which may be more motivational in nature than its relationship with non-moral ideology, such that the closedness of certainty and decisive disambiguation may be something uniquely *sought* by moral conservatives who may not necessarily have it naturally.

A postscript on values

After writing the above section, I realized that I *had,* actually, measured Schwartz values in student sample 2—indeed, had measured all ten of them: Achievement, Benevolence, Universalism, Power, Stimulation, Hedonism, Conformity, Security, Tradition, and Self-direction, using the SSVS. This presents an opportunity to check and replicate some of the results from above. To keep the survey under an hour, each participant had a one-in-three chance of being assigned to any one values question, resulting in Ns of around 55 for each value measurement.

The correlations of table 11.2 show that, as with the experimental sample, Universalism in student sample 2 is by far the most important value for ideology in the fiscal and tough-tender dimensions. (The moral dimension is curiously unrelated to values in student sample 2 except for weakly and negatively to hedonism).

The main question I want to investigate further is whether Universalism, obviously so important for ideology (and, as I've suggested, a plausible proxy measure therefor), is related to psychological variables. Recall that in the experimental sample, Universalism is unrelated to attributionism or deliberative complexity, mostly unrelated to traits, related to reaction-time-based categorization in the right direction, but related to categorization strength by self-reported preference in the *wrong* direction, all of which leaves the psychological bases of value-Universalism in a good deal of doubt.

In student sample 2, Universalism again fails to correlate with traits. However, it is related as originally expected to attributionism. The tendency to attribute behavior to simple traits is negatively related to value-Universalism, $r = -0.27$, $p = 0.024$ in a one-tailed test, $N = 54$. Universalism is negatively correlated with Ambiguity Intolerance too, $r = -0.29$, but the N is only 17 as AI was itself administered only to a subsample. With categorization, however, the result is more interesting. Universalism is negatively related to general categorization strength, $r = -0.29$, and to Categorization$_{tough-tender}$, $r = -0.35$, one-tailed ps $= 0.016$ and 0.005 respectively, a suggestion that perhaps we should take the reaction-time measure from the experimental sample more seriously than the stated-preference.

Table 11.2. Correlations of Schwartz values with issue-position-based ideological dimensions for Student Sample 2

Value	Corr. with fiscal ideology (*p* – value)	Corr. with tough-tender ideology (*p* – value)	Corr with moral ideology (*p* – value)
Achievement (N=46)	0.08 (0.58)	0.18 (0.23)	0.06 (0.69)
Benevolence (N=59)	-0.07 (0.60)	-0.25* (0.057)	-0.08 (0.55)
Universalism (N=54)	-0.35* (0.009)	-0.42* (0.002)	0.02 (0.90)
Power (N=55)	0.18 (0.20)	0.17 (0.23)	-0.16 (0.24)
Stimulation (N=50)	0.10 (0.50)	-0.14 (0.33)	-0.00 (0.997)
Hedonism (N=61)	-0.10 (0.46)	-0.07 (0.57)	-0.26* (0.045)
Conformity (N=53)	0.04 (0.80)	0.22* (0.11)	0.12 (0.41)
Tradition (N=61)	0.07 (0.60)	0.01 (0.92)	0.19 (0.14)
Security (N=71)	0.12 (0.31)	0.03 (0.78)	0.10 (0.40)
Self-direction (N=60)	-0.22* (0.09)	-0.25* (0.05)	-0.06 (0.66)
All significance tests two-tailed. * *p* < 0.			

Ultimately, then, with this additional evidence, it would appear that value Universalism is indeed related to cognitive flexibility-and-rigidity measures such that more rigidity and categorization predicts higher Universalism…which then predicts, or acts as a darn good substitute measure of, conservatism (and especially fiscal and tough-minded types).

Appendix to chapter 11

Economic individualism items

Please indicate your level of agreement or disagreement with this statement:

1. Any person who is willing to work hard has a good chance of succeeding; you don't need a bunch of help from "society."
2. Just because an individual works hard and is determined, that by itself is NO guarantee of success.
3. Most people who don't succeed should not blame "the system" or their "societal situation" or "circumstances beyond their control"; the truth is they probably have only themselves to blame.
4. Even when an individual is ambitious, determined, and willing to endure personal sacrifice, they are still likely to find success to be elusive or beyond their grasp.
5. If an individual works hard, he/she will almost always get what he/she wants. It's a simple matter of sacrifice and reward: what an individual puts in, he/she gets back.
6. Even when a person tries very hard, reaching one's goals requires more than just individual effort: good luck, help from others, and the right circumstances are perhaps even MORE important.

Economic communalism items

Please indicate your level of agreement or disagreement with this statement:

1. Hard work is only a small part of what brings success: even more than your own efforts, you need help from your family, friends, and the surrounding community.
2. No matter how much money you make, success is defined not by financial reward, but by the different people you've shared your experiences with during your career.
3. When a person encounters financial difficulties, it's probably not his fault. Instead, he probably hasn't received the community support that would have helped him stay afloat.
4. All the ambition, determination, and personal sacrifice in the world won't help you succeed if you don't have a supportive and caring community surrounding you.
5. Getting what you want or reaching personal goals in your career is a lousy definition of success because it's self-centered. Enjoying life's journey and contributing to others' well-being is more important.

6. Success or failure is not something a person "deserves" or "doesn't deserve." People should just work together to try to spread a feeling of security and well-being to all members of the community.

Values items

Universalism:

> Please rate how important in your life is the principle of UNIVERSALISM—that is, broad-mindedness, beauty of nature and arts, social justice, a world at peace, equality, wisdom, and unity with nature.

Achievement:

> Please rate how important in your life is the principle of ACHIEVEMENT—that is, success, capability, ambition, financial success, and influence on people and events.

Power:

> Please rate how important in your life is the principle of POWER—that is, social power, authority, and wealth.

Conformity:

> Please rate how important in your life is the principle of CONFORMITY—that is, obedience, honoring parents and elders, self-discipline and politeness.

Chapter 12

More explorations from the experimental study, part 2: Extending theory (with preliminary tests)

In this chapter, I try to extend C-theory beyond its current bounds, deal mostly with ideas, and worry less about empirical verification. I will suggest much more than the data authorize me to say, and present ideas (particularly evolutionary-psychological ones) which might even be ultimately untestable. I will allow the reader to judge for him- or herself whether the discussion is nonetheless illuminating or even healthy. Of course I remain committed to the principle of submitting ideas to the rigors of empirical evidence before asking others to endorse them. This does not mean, however, that ideas which cannot (yet, given current measurement instruments) be falsified in a Popperian sense "have no place" in scholarly discussion. We should let good ideas of all kinds flow freely, and submit them to whatever level of testing we can, when we can. In that spirit then…

I have made clear that I believe left-right thinking styles are very fundamental to human psychology. Indeed, assuming that no institutionalized structural barriers, such as caste systems or other high barriers to class mobility, totalitarian security-state apparatus, apartheid systems and the like, *force* a political sorting, and there is sufficient freedom in a society that people of varying social strata may plausibly cast their lot with different parties which represent themselves ideologically rather than purely by realistic interests (i.e., by representing only the interests of a particular class or profession), I argue that the political sorting which will occur will almost always be recognizable as a left-right sorting, in which, say, pro-militarism will "go with" pro-hierarchism, individualistic, anti-outsider, harsh-on-crime, and pro-rigid-morality positions, these positions being held by people whose cognitive style is more rigid, mechanical, and marked by categorization, while the opposing camp will be recognizably liberal, with all that entails. I haven't proved that in this work, but I've at least shown that it's plausible that a wide variety of issue positions are influenced by a broad psychological phenomenon; humans are not blank slates on which opinion leaders write the ideologies of the current day; nonattitudes is a misleading concept.

If this dimension is so tremendously important to the natural political sorting, then an evolutionary origin of this dimensional diversity is implied. It would seem that there must be some reason in our evolutionary-psychological roots why this particular variance in human psychology developed and became so important for how we do politics.

Now, evolutionary explanations for modern human behavior are notorious for being "just-so": "just" because we behave in such-and-such a way, "so" we must have needed to behave that way 100,000 years ago…and now why would that be? Potential

reasons spring easily to mind, and "Aha!" we say, we have "discovered" aspects of the "evolutionary environment" which can now be employed in explaining a range of modern behavior, often including the very behavior from which we inducted the imaginary evolutionary environment in the first place.

Criticism of such just-so reasoning as applied to evolutionary psychology is sometimes justified, and the theory I develop here is indeed vulnerable to this criticism. On the other hand, Ketelaar and Ellis (2000) argue quite powerfully that the charge that evolutionary theories are unscientific is unwarranted, derived from a "mistaken" Popperian view of how science operates. And Sidanius and Kurzban (2003) argue that we should be suspicious of explanations for human behavior that do not appear to be evolvable. This is entirely sensible: even where evolutionary theories aren't strictly falsifiable, social scientists should habitually think about whether the behavioral mechanisms they propose are consistent with at least plausible accounts of the evolutionary environment and best-available knowledge of evolutionary processes. The problem is that with so little definitely known of the "evolutionary environment"—and it is often assumed that we know more than we do—a sufficiently fertile imagination can surely paint a picture of an Eden to evolve virtually any psychological mechanism in need of explaining.

Nevertheless, to understand human behavior deeply, we *must* have some concept of how its foundational psychology evolved, for evolution *is precisely how all organisms have come to be as they are.* Without evolutionary concepts, postulations of psychological mechanisms beg burning questions of their prior origins *at best*—e.g*., a dual-process, central-and-peripheral processing system may predict attitude change (Chaiken and Maheswaran 1994; Petty and Wegener 1999), but why would such a dual system exist rather than one which processes all information centrally? At its worst, psychological theory without evolutionary concepts bogs down in Quixotic attempts to "explain" behavior by resorting to unobservable, if not outright epiphenomenal, intra-psychic motivations and feelings that amount to explanation by metaphysics, spirituality, or even religion. People endorse conservative or liberal ideas because "they," meaning presumably a consciousness-experiencing entity, a "soul" whose private experiences are fundamentally beyond all observability, "need to" and "feel better" when "they" do.

This helps explain why I consider cognitive-process variables superior for purposes of explaining ideology (and all psychological phenomena) than motivational variables and trait self-reports such as Ambiguity Intolerance and Openness—even if those self-report variables occasionally correlate with ideology at higher levels than measures of cognitive process. It's more satisfying to know people who are liberal are *observed to react to nonpolitical stimuli in a certain way* than that people who are liberal *report that they feel a certain way, or are a certain type of person.*

Why would humans have evolved a psychology with such politically meaningful variance on a strong-or-weak cognitive categorization, or a cognitively-rigid-to-flexible dimension? This requires, at least, answers to two questions: first, how does variance in a population evolve in the first place, when presumably the "fittest" individual organisms survive? Variance along a behavioral dimension should

either be evolved out of a species because one end of the dimension is maladaptive, or the variance should be meaningless to survival. The latter would seem a remote possibility, however, because some random variance in a psychological variable which had no relevance to survival through evolutionary time would not be expected to emerge as so determinative of collective behavior in a social species now. So we must explain how *variance* along a meaningful psychological dimension, rather than just a particular phenotype, is adaptive for individuals who are passing along their genes.

The second question is: What aspects of the evolutionary environment would have caused this particular variance to emerge?

The answer to the first question is, quite simply, group-selection (Wilson and Sober, 1994). By group-selection theory, organisms that live in groups are individually advantaged for survival purposes when the group in which they live outcompetes other groups of organisms of the same species for resources. The group itself, then, functions as a gene-carrying organism for natural selection purposes. Group-selection theory is, in evolutionary biology, not without controversy (Samir 2001). For example, it is argued that humans could not have been subject to group selection because, although group members may acquire survival advantages based on group membership, humans interbred frequently with outgroup members through evolutionary time (Maynard Smith 1987). However, group selection is at least plausible and without it, genotypic variance in a species would appear (at least to my untrained eyes—I am not an evolutionary biologist) unevolvable or else would necessarily represent, random, evolutionary "junk."

The answer to the second question is that intergroup competition or even warfare would have conferred advantages on groups that possessed certain variances in psychological types. In particular, we are probably looking for a tribal-warlike evolutionary history. I have heard this notion bandied about in the halls of social science academia blithely, as though we know with certainty that early humans and our immediate ancestors were undoubtedly warlike. People seem to assume that archaeological evidence provides a definite "yes" to the question of humanity's warlike pre-history. And anyway, the just-so reasoning proceeds, we are warlike and partisan now, and so are chimpanzees, so isn't it obvious that early human bands warred against one another? Do not underestimate the power of images from the Discovery Channel and from *2001: A Space Odyssey* to confirm this widely held belief.

In fact, there is some evidence that early humans made war on each other, but my own pursuit of such evidence suggested it was not nearly as definitive as one might like. According to Klein (1999), while we do have possession of a few human bones from several hundred thousand years ago which bear marks which could be the result of weapons, it is asking too much of archaeology to determine whether in fact *only* weapons could have made such marks; the work of animal teeth cannot be ruled out.

Knauft (1991) contrasts simple human societies with great-ape and "middle-range" human societies—simple human societies are thought most similar to early

human "pre-state" evolutionary scenarios—and finds a relative absence of violence in the simple societies, casting doubt on group-selection scenarios in which intergroup competition and violence prevail. And Thorpe (2003), surveying mainly European archaeological evidence from early human prehistory, finds large amounts of regional variation in wounds consistent with warfare, in contradiction to theories implying universal warfare. See Hart and Sussman (2005) for additional corroboration of the *lack* of conclusive evidence in the fossil record of human war.

Tooby and Cosmides have argued emphatically that warriorism evolved in humans (1988). Considering modern levels of violence seen in the news, this is an intuitively satisfying argument. However, backward induction from our current status as warlike to an imaginary evolutionary environment obviously does not count as evidence when the warriorism of the past is intended for use as an explanation for our current psychology. (I am not necessarily saying this is what Tooby and Cosmides attempt to do.) We need better physical evidence in the archaeological record, and this is simply not as easy to come by as some believe.

Wrangham (1991) suggests that the same pressures that induce wolves and chimpanzees to raid and kill one another in groups—intergroup hostility and imbalances of power between groups—acted on humans, concluding that coalitional killing probably has a "long history in the evolution of both" humans and chimps; and Watts and Mitani (2001) find that not all male chimps participate equally in the border patrols which lead to raids, and indeed the more warmaking chimps associated with each other socially more than they did with other males ("conservative" chimps hanging out together?). But we need archaeological evidence for verification, and we just don't know whether human tribes made war upon each other in evolutionary history, however "obvious" it may seem from our current psychology. Nonetheless, the little archaeological evidence we have certainly does not rule out a warring species, so that is part of my story.

Before I tell my "story" of how strong and weak categorization evolved, I hasten to add that I'm aware that I've failed utterly to incorporate sex differences into the story. Based as it is on warfare (and the assumption that males do most of the warring), this is largely a story of how differential thinking styles might have evolved *in men*. And so, really, this is only half the story. I hope that an exchange of ideas with other scholars will help me to refine it over the years.

And the story goes like this: pre-human tribes competed against each other, and made war, in a quest for resources. In such an environment, the tribe with the fiercest warriors typically prevailed. But as the brain grew larger through evolutionary time and as more sophisticated planning and more sophisticated weaponry became feasible, individuals were advantaged who belonged to tribes that had both effective warriors *and* people who innovated new weapons and new means of gathering resources.

According to the story, it happens that effective warriorism and effective innovation are related to cognitive style, and in opposite ways. In particular, an effective warrior must be decisive and think quickly, not questioning himself. The effective warrior makes quick, black-and-white distinctions between self and other,

between his tribal brother and the member of the other tribe, between us and them. This means seeing both individuals (and maybe competing co-temporal hominid species) *and* behaviors (especially cruel, death-dealing, and dominant behaviors) in starkly categorical terms: us/them, acceptable/unacceptable.

However, this kind of decisiveness is anathema to innovation. Innovators must have an outlook that allows for the perception of possibilities that are not currently before our eyes, must be able to *reconsider* what has, by first appearances, been considered and disposed of already. Their cognitive categories, telling them how things are, must allow leakage from distant and seemingly unrelated concepts of how things might otherwise be. In hand-to-hand combat, and probably in battlefield leadership, this is a tremendous cognitive disadvantage.

Once human cognitive abilities evolved to the point that sophisticated weapon and resource-gathering innovations could benefit a tribe, and the members of the tribe were capable of learning to employ them, a tribe with both strong warriors and potential innovators would have been advantaged over a tribe with only fierce warriors—and, just as importantly, would have been advantaged over a tribe in which all individuals had uniformly traded in a little genotypic ferocity for a moderate amount of inventiveness. The dominant tribe would have both great inventors and great warriors (and, necessarily, many people in between).

For fun, let me push this just-so analogy over the edge. Today, we see this "warrior/scientist" dichotomy played out in two of the most prominent career pursuits: business and academia. The business world is (outside the armed forces) the modern battlefield where dominant and warlike competitive instincts serve individuals well. And the academic world is the modern cauldron of innovation, where new ideas are rewarded, even if those ideas are so abstruse and theoretical that they cannot even be implemented, let alone understood by any but a select few high priests of a discipline. Of course, the world of business is dominated by fiscal conservatives—who, as some of my survey questions seem to indicate, are not eager to share back the spoils of their victories on the modern battlefield. (The military, of course, is also a bastion of conservatism.) And conservatives are forever baffled at how the entire world of academia can be so dominated by liberals. Surely, they assert, our universities, battle forts of the liberal establishment, work constantly to purge their ranks of 5th-column conservatives. It never seems to occur to anyone that perhaps the same psychology—curiosity, non-categorization, comfort with not knowing things—that makes academia an attractive career fit for an individual also makes him politically liberal—and likewise for business and conservatism.

If I haven't lost you, I'd like to push this a little further still. In the evolutionary environment, for the sake of harmonious group living, additional "types" were necessary to maximize the survival potential of a band of humans, and these types too had special relationships with strong and weak categorization. First, as humans became more specialized in their tribal roles, a premium was placed on cooperative inner workings of the tribal society, and there needed to be a large number of people who saw these norms as immutable and enforced the rules or norms

of the community. These "norm-enforcers" would have shared a compartmentalizing psychological style with warriors.

Further, as inter-tribal warfare became more and more crucial to survival, tribes needed means of solidifying a sense of membership and loyalty to the tribe. As language developed, folklore and a sense of a unique tribal history helped to cement an individual's knowledge that he belonged to this, and not that, group. Even, maybe especially, the music—the drum beats, the songs—of the tribe would become part of this cultural identity, and it's even thinkable that knowing the "right songs" would become necessary for the survival of individuals who found themselves among, or in the proximity of, strangers. Of course, if it became advantageous for the survival of tribes to have cultural knowledge, someone had to be the creators and keepers of that cultural knowledge. These were, of course, storytellers and musicians: they were artists.

So, empirically then, are police officers more conservative than artists? I don't have data on this, so unfortunately, this question will remain unanswered (except in the mind of many readers, and with definitive closure I suspect.)

I've now enumerated four types, warriors and innovators, norm-enforcers and keepers of cultural knowledge. Are there other major "types" that a society needs for maximal survivability in a group-selection scheme? No doubt others can be thought of. But I think these four types are about as archetypal as can be found.

A preliminary test

For the moment, let's return to the initial, simple, dual notion of warriors and innovators. To test empirically whether conservatives are really the modern expression of early-human tribal warriors, and liberals the modern expression of early-human innovators, I constructed a time machine to observe early human tribes in action.

Okay, that isn't true. In fact, an empirical test of this hypothesis may not strictly be possible. I cannot say for sure what happened in human evolution, whether tribes with variance along a rigidity-flexibility dimension were advantaged, or whether such a variance really evolved in response to natural group-selection forces. I could, no doubt, build a formal model in which individuals' utility was increasing in their groups' utility, and in which I rigged a mathematical "evolutionary environment" to reward groups for having variance in a hypothetical warrior-innovator dimension. I am not a formal modeler, but I've no doubt utiles could be assigned so as to make it happen. In fact, Bowles and Gintis (2002) have done something very similar, modeling an early human environment in which a variance "evolves" such that strong reciprocators and selfish agents coexist for overall group benefit, even without group extinctions.

However, the general hypothesis is not entirely beyond our ability to investigate, for the hypothesis can be subject to attempts at supporting or damaging it by looking for implied vestiges of warrior-innovator psychology in our modern psychology. If modern-day conservatism is an evolutionary echo of early-human

warriorism, then conservatives should retain, to some extent, the "mind of a warrior" even today. They should see themselves more as warriors in the course of the daily events of their lives, while liberals should see themselves less in this light.

If I can measure "trait warriorism" in people, and if the scale appears to tap something real, and if conservatives are *not* higher in this trait than liberals, then that *would* count as moderate evidence *against* the conservatives-as-warriors hypothesis, and I would at least be dissuaded from pursuing the hypothesis further. If conservatives *are* higher in warriorism than liberals, I might be encouraged, in future research, to try to innovate new measures which might at least help refine the evolutionary-psychological theory of ideological types, with the knowledge that observations of prehistory will remain shrouded in whatever fog our best archaeologists have left us with.

So I conducted just such a preliminary test. Embedded in the experimental survey was a scale I constructed to measure "trait warriorism," asking people to characterize as accurate or inaccurate the following self-descriptions:

1. ("Ready to fight") When challenged by others, I am ready for a fight, even a physical fight.
2. ("Front lines") If my country is at war, I would rather be supporting the war effort in ways OTHER than fighting on the front lines.
3. ("War movie") When I watch a war movie, I identify more with the soldiers than with the civilians.
4. ("Series of battles") I look at life's tasks as a series of battles to be won or lost.

The scale is, quite obviously, a very preliminary one. Many more items should ultimately be tried and kept or rejected. These are, in fact, the first four items I've tried.

86 subjects—about half the sample—answered this series. Crohbach's α was a poor 0.37, and improved slightly to 0.44 if "series of battles" was dropped, which I did. Because warrior roles are culturally more associated with males, it is sensible to control for sex in checking for relationships between warriorism and other variables. I first ask whether "warriorism" is related to ideology. Table 12.1 indicates that, in sex-controlled correlations, it is suggestively but nonsignificantly related to tough-minded conservatism, and significantly related to fiscal conservatism, both measured by issue positions. It is more strongly related to *self-identified* fiscal conservatism. It is, not surprisingly perhaps, unrelated to moral conservatism of any measure. It is also unrelated to economic individualism and communalism—a minor surprise.

Table 12.1. Partial correlations of warriorism scale with ideological measures and respondent sex

Ideological variable	Partial correlation	p – value (one-tailed)
Tough-tender ideology, by issue positions	0.13	0.12
Sex	-0.42	0.000
Fiscal ideology, by issue positions	0.21	0.025
Sex	-0.43	0.000
Fiscal ideology, self-identified	0.29	0.003
Sex	-0.42	0.000

N = 86

Next, I ask whether warriorism is related to any of the psychological variables which are known to be related to ideology. It is entirely uncorrelated with Openness, attributionism and deliberative complexity, but suggestively and positively correlated with ambiguity intolerance (r = 0.16, p = 0.14 one-tailed), and most strongly of all correlated with the reaction-time-based measure of categorization strength, r = 0.31, p = 0.052, two-tailed.

Warriorism is significantly related to the Schwartz value "Power", r = 0.21, p = 0.06 two-tailed, and to my manufactured value, "Victory," at r = 0.31, p = 0.004.[1] Both of these "values" in turn predict fiscal and tough-tender ideology, and victory strongly predicts all three dimensions of ideology, such that people who rate as high the importance of "the principle of victory—that is, fighting and winning battles, competitiveness, defeating people who stand in your way, and seeing life as a series of battles to be won" are more fiscally (r = 0.39, p = 0.0002), tough-mindedly (r = 0.42, p = 0.0001) and morally (r = 0.34, p = 0.002) conservative, N = 81 in each case. These relationships are mutually independent: although moral conservatism has the lowest correlation with victory, controlling for both tough-tender and fiscal ideology, moral ideology's partial correlation with victory is still positive and significant.

The "victory" question, in fact, should perhaps be recast as an item in the warriorism series should additional research be conducted on warriorism as a deep psychological disposition. Adding "victory" to the warriorism scale increases alpha, as does adding the value "power."

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[1] Note, however, that much of the language of the "victory" item is shared by some of the warriorism items.

Finally, it's worth noting that at various times throughout this research project Extraversion and Dominance have been found positively related to every dimension of conservatism, and these are likely to be decent proxies for warriorism. (In this dataset, $r_{warriorism-extraversion} = 0.30$, $p = 0.002$, one-tailed.)

On the whole then, even the most preliminary stab at measuring "warriorism" certainly does not damage the conservatives-as-warriors hypothesis. The findings are mostly consistent with the hypothesis, suggesting that further research, however difficult without a time machine, would be well advised, especially with improvements in the warriorism scale and new attempts to measure "innovationism," "norm-enforcement orientation" and "artistic orientation." These dispositional variables would ultimately be modeled as causally *prior* to cognitive style itself, as they are theoretically positioned as the evolutionary forces that gave rise to the flexibility-rigidity dimension itself.

A separate theory of moral ideology (conservatism especially)?

I have made mention several times of an emerging theory of moral ideology which preserves the notion that there is a psychological link between moral and other dimensions of ideology—*i.e.,* moral conservatives do not endorse tough-minded and fiscally conservative positions simply because historical happenstance has led them to do so, but for deep psychological reasons, so that we can expect that 1,000 years from now, moral conservatives will still endorse similar, pro-hierarchy, pro-harshness policies. This emerging theory, however, must account for the fact that, although the conventional wisdom sees moral conservatives as closed-minded, moral ideology has demonstrated surprisingly weak relationships with many (though not all) of the flexibility-dimension psychological variables employed throughout this research project.

Amazingly, then, it is moral ideology which, given only traits and cognitive style, still seems poorly explained by my own investigations. Moral conservatives do not seem to categorize the world as strongly and as effortlessly as fiscal and tough-minded conservatives do. They do not seem to think in as rigidly logical a style about events. The world might appear to moral conservatives nearly as fuzzy as it does to liberals.

But moral conservatives *do* seem to crave a certainty liberals have no need for, and occasionally it comes through strongly. Multiple times in my data moral conservatism has correlated strongly with *Intolerance* of Ambiguity, or with a *need* for closure. And there are just too many previous findings for us to reasonably doubt that moral conservatives, like secular conservatives, are in some way less "Open" or "flexible" than liberals.

The emerging theory suggests, however, that they appear less "Open" for different reasons than secular conservatives do. According to the data I've presented, secular ideology appears to be a function of individual differences in cognitive style that originate in very elemental aspects of the cognitive-perceptual process, such as categorizing basic objects and concepts that make up the building blocks of

deliberation. For moral conservatives, the origins of Ambiguity Intolerance don't appear to emanate directly from cognitive style. Perhaps, then, moral conservatives *do* have psychological needs—fears, needs for certainty and so forth—which can be satisfied by the *adoption* of certain conservative beliefs, or even the adoption of pseudo-ideologies such as a *stated* Ambiguity Intolerance.

But can a need for certainty be satisfied by opposing income taxes for the wealthy? Certainly not obviously. However, a need for certainty would undoubtedly cause an individual to seek *leadership* among politicians who show the strongest backbone and the absolute least hint that they question their own beliefs. The leader who sees the world in the sharpest, clearest, most categorical terms, whose deliberative complexity is very low, is precisely the kind of leader someone craves when in the grips of an anxious need for clarity, for given such leadership, he can attain certainty by proxy. Obviously, according to my data, such a leader is likely, due to his psychology, to be a tough-minded fiscal conservative, who endorses harshness on crime, little generosity for immigrants or the poor, government non-interventionism, and frontier-style individualism, someone who explains both good and bad behavior via direct trait attributions, and who sees an individual's problems as his and his alone, someone who would regard government attempts to undo unsavory outcomes as perverted.

There's a potential problem: as attractive as the tight and irresistible logic of the fiscal conservative may be to the craver of certainty, moral conservatives might also be attracted to the gravitas of social institutions that emerge from thousands of years of tradition (no more than six thousand, of course!), a Burkean view of the individual as nestled in a tightly interwoven and interdependent community. But isn't this an economically liberal view? In many ways, yes. So should the religious conservative be conservative or liberal on economic and generosity-oriented issues?

The theory here is that leadership goes a good ways toward breaking this tie. The morally conservative could never follow the opinion-leadership of squishy, relatively fuzzy-thinking, over-thinking and forever indecisive liberals, even if what they're advocating is a communitarianism that moral conservatives could in theory be sold under the rubric of tradition or good public morality. The liberal brand of communitarianism is at any rate vague and involves having large, unknowable and distant government agencies offering vague aid to unknowable individuals who themselves live far, far away. It leaves much to the imagination, where the community outreach of the church soup kitchen represents a clearer, more authentically conservative picture of communitarianism, one which fiscal and tough-minded conservative leaders can peddle with total sincerity since it conflicts little with individualism or a policy of toughness toward uncooperative outsiders who are *not* within the immediate community. Few fiscal conservatives have a problem with individual acts of kindness, or volunteerism at the congregational level.

As was the case with a warriorism-conservatism connection, this research project was not designed to fully explore this refinement of theory, as it emerged late in the data-gathering process. For example, I'm not entirely certain where the "need for" decisive leadership comes from. It could be inculcated during a strongly religious

upbringing. It could be genetic. It could even originate in childhood struggles with dysfunctional parents—the kind Betty Glad (1983) ascribed to Ronald Reagan.

Some empirical results

For the moment, we would at least like to know whether in the first place moral conservatives really do crave strong leaders more than liberals do. It would be additionally helpful to find that they crave such leadership even more than secular conservatives do. Fortunately, this refinement of theory began to dawn to me early enough that I embedded a new measurement into the experiment: the "preference for a strong-categorizing leader." The idea is that very morally conservative individuals will express an especial desire for a fictitious leader who is described so as to appear very categorically decisive, and deliberatively uncomplex or straightforward in his outlook, even though he never espouses any morally conservative policy positions. If we believe my data, we would surely expect this politician to endorse tough-minded and fiscally-conservative positions, which his morally conservative followers would probably adopt.

The prediction I test is that morally conservative individuals will be attracted to categorizing leaders, even controlling for their own levels of fiscal and tough-minded conservatism. This would indicate that there is something about moral conservatism that propels an individual toward categorizing and decisive leaders regardless of whether the individual already holds the kinds of policy positions (fiscally conservative, tough-minded) that such a leader would be expected to endorse.

The measure of preference for a categorizing leader was drawn from seven items. The first described two leaders in terms of how willing they are to reconsider their policy positions, and asked participants to indicate on a 5-point response scale which leader they preferred, and how strongly:

> In a race for governor…
>
> Candidate A says, "You have to decide what you believe, what policies you're for and against, and then stick to that. If you're for raising taxes, fine. If you're for cutting taxes, fine. But state your principle, and then stick to your guns for your entire term of office. Don't change it, or else nobody knows where you really stand."
>
> Candidate B says, "You should tell the people your general inclinations and instinctive tendencies, but you always have to leave room for changing and adapting your policies. You may get into office and find things aren't as they seemed, or maybe the world changes after you get into office. Tell people your basic approach, but you can't guarantee you'll always be married to a particular policy."

Note, of course, that neither candidate endorses any particular position. In the next item, one candidate boils issues down to their essence, and as a result knows exactly and categorically where he stands on an issue, while the other candidate sees issues as extremely complex and is consequently fuzzy in his positions: he knows how he *approaches* issues, but doesn't hold such clear-cut positions. In fact, candidate B describes himself as, essentially, integratively complex:

> In a race for county supervisor…

> Candidate A says, "Most issues, and most problems, are pretty simple. Sometimes they LOOK complex, but they seldom really are if you're clear about what is the real essence of the issue. Give me an issue, and chances are I know exactly where I stand on it, and then I'll tell you where."

> Candidate B says, "Issues are indeed complex. I can tell you how I generally approach a particular issue, but I might not have an ironclad, black-and-white stance on it. I will always consult multiple experts and consult voters, and reach a policy solution that represents a compromise between multiple points of view."

Again, of course, neither candidate endorses a position or even mentions an issue. One is more categorizing and direct, the other more deliberatively complex.

A third item simply reads, "In a race for Governor…Candidate A is described as being "thoughtful." Candidate B is described as being "Decisive."

A fourth item does involve something approaching a very general policy-position endorsement, but not of the moral variety. Rather, it's an approach to foreign policy involving the candidates' willingness to categorize other nations as friends or enemies. The item reads,

> In a race for U.S. Senate…

> Candidate A says, "We have to be clear about who are our friends and who are our enemies, work closely with our friends, and be careful not to get too entangled, or interact too much, with our enemies."

> Candidate B says, "We shouldn't designate certain nations as friends and certain nations as enemies. Every nation, however different their values, is a potential partner for cooperation and the pursuit of mutual interests."

A fifth item describes candidates as endorsing different policy positions, but policies which are never associated with either liberal or conservative ideology, but almost directly take their cues from a willingness to categorize a bill:

In a race for U.S. House of Representatives…

Candidate A is described as believing in the one-bill/one-committee principle: An agricultural bill is drafted in the agriculture committee. A highway construction bill is drafted in the highway committee. Then the House should vote up or down on that bill.

Candidate B is described as favoring the multiple-committees principle: Different committees have different areas of expertise, and since a bill often has effects beyond just one issue area, bills are more effective when they've been through multiple committees. Then the House can vote on them.

In a sixth item, one candidate "always seeks more information to help make decisions" and then "revisits those decisions as more information comes in," while the other candidate is "someone who makes decisions based on the one or two most pertinent facts, then doesn't change their mind easily." In a seventh item, one candidate is for "a-la-carte" taxation, a category-friendly kind of taxation in which "People who use the roads should pay the most for road maintenance. People whose kids go to the schools should pay for the schools. And so forth." The other candidate says that "separating tax money into these different categories takes away flexibility."

Neither the item in which candidates are described as "thoughtful" or "decisive" nor the a-la-carte versus general-revenue taxation scaled well with the others, leaving a 5-item scale with an alpha of 0.66. One of the items in the scale, the "seeks more information" versus "doesn't change their mind" item was a reverse-scored item.

So, does moral conservatism predict a preference for a categorizing leader, even holding constant one's level of fiscal and tough-minded ideology? Indeed it does, and very strongly, as shown in table 12.2. While it's not surprising that fiscal and tough-minded conservatives also prefer a more categorical-thinking, less deliberatively complex leader, it is satisfying to see that it is moral ideology with whom this preference is most strongly connected, even though the only policy positions advocated by candidates in the scale questions are a tough-minded foreign policy position (categorizing nations as enemies or friends) and an arcane, ostensibly nonideological one having to do with single versus multiple referrals of bills in the House.

But perhaps I have miscalculated these issues as secular: perhaps the Manichean division of nations into friends and enemies calls to mind President George W. Bush, who was president at the time of the experiment and may have a special appeal to moral conservatives, so the friends/enemies issue is a *de facto* moral issue.

Removing the "enemies" item from the scale reduces alpha by 0.01, to 0.65. But when the new scale is used in the regression, the results are substantively the same, and in fact moral ideology outperforms the other dimensions of ideology in predicting the categorizing-leader preference even more soundly, as shown in table

Table 12.2. Preference for strongly categorizing leader, standardized scale OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Moral ideology, issue positions, standardized	0.29 (0.07)	0.000
Fiscal ideology, issue positions, standardized	0.21 (0.09)	0.008
Tough-tender ideology, issue positions, standardized	0.10 (0.08)	0.12
Participant sex (0=M, 1=F)	-0.007 (0.096)	0.942
Constant	0.005 (0.68)	0.941

N = 154; R^2 = 0.20

Significance tests one-tailed for ideology, otherwise two-tailed

12.3. This substantive result continues to remain unchanged when the bill-referral item is removed. Indeed, this relationship is simply not driven primarily by one of the 5 items in the scale. Clearly, a straight-talking, categorically certain leader is appealing to people whose policy positions are more *morally* conservative, and it appears that the leader-preference-moral-ideology relationship is at least as strong as that with secular ideology, and probably stronger.[2]

What about religiosity? Is religiosity itself, measured here by church attendance (which is not, admittedly, synonymous with religiosity), associated "all by itself" with the preference for a strong-categorizing leader? Yes, it is. If we replace moral ideology with religious attendance in the regression, religious attendance performs very similarly to moral ideology, as shown in table 12.4. If going to church often is associated with the same leadership preference as taking morally conservative political positions, this suggests that, perhaps, I'm close to having the psychology right: there is a *seeking* or a *need* for having things settled in a way religion can do, and political leaders offer some of what scripture or churches or clergy offer in this regard. Or, alternately, religious instruction may inculcate a desire for decisive leadership. In other words, either a need for certainty drives people to church, or going to church drives a need for certainty—or both. There will have to be further

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[2] If tough-tender ideology is dropped from the regression so that it does not "steal" some of the explanatory power from fiscal ideology, moral ideology still outperforms fiscal ideology, but by a tiny, nonsignificant amount.

tests of such models, of course, with a research protocol explicitly designed for the purpose.

Table 12.3. Preference for strongly categorizing leader with "enemies" item removed, standardized scale
OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Moral ideology, issue positions, standardized	0.24 (0.08)	0.002
Fiscal ideology, issue positions, standardized	0.15 (0.09)	0.048
Tough-tender ideology, issue positions, standardized	0.10 (0.09)	0.14
Participant sex (0=M, 1=F)	-0.03 (0.10)	0.79
Constant	0.01 (0.07)	0.86

N = 154; R^2 = 0.13

Significance tests one-tailed for ideology, otherwise two-tailed

There is an opportunity for corroboration within the experimental sample. The mayoral race, discussed in an earlier chapter, in which both candidates discuss re-zoning a city block for a hotel, but one candidate "prefers to boil decisions down to the 'essence of the issue' while the other says "you have to think hard about the multiple effects of a decision" was repeated for this sample. Responses to this race's result were not included in the "preference for a categorizing leader" series because the item is presented differently and has different response options. However, despite the fact that the only "issue" discussed is a purely economic one involving zoning for a hotel, *only moral conservatives have any preference at all* for one leader or the other, as shown in table 12.5. And they prefer the leader who "boils it down." Many American political psychologists armed with this result alone would surely wield it as evidence that moral conservatives, but not conservatives of any other kind, are the categorical, rigid thinkers. This would be a justifiable conclusion were one not standing next to a mountain range of evidence that this psychology describes secular conservatives much, much better. Reading it all together, the implication is fairly clear that this quality is especially attractive to moral conservatives *in a leader.*

Table 12.4. Preference for strongly categorizing leader explained by religious attendance and secular ideology, all fully standardized OLS coefficients

Independent variable	Standardized coefficient	p – value
Religious attendance	0.22	0.002
Fiscal ideology, issue positions, standardized	0.28	0.001
Tough-tender ideology, issue positions, standardized	0.13	0.07
Participant sex (0=M, 1=F)	-0.002	0.97
N = 154; R^2 = 0.18		

Significance tests one-tailed for ideology, otherwise two-tailed

Table 12.5. Preference for a mayor who "boils it down", explained by ideological dimensions, experimental dataset

Independent variable	Coefficient (std error)	p – value
Moral ideology, by issue positions	0.22 (0.08)	0.0045
Fiscal ideology, by issue positions	0.036 (0.095)	0.35
Tough-tender ideology, by issue positions	0.05 (0.093)	0.28
Sex (0=M, 1=F)	0.09 (0.15)	0.56
N = 154; R^2 = 0.06		

Significance tests one-tailed except sex, two-tailed

This result is, to remind, a high-fidelity replication of the same item's performance in the second student dataset where it was first presented in Chapter 6. Unfortunately, I did not administer the item to the Tallahassee adult sample, for survey-length considerations.

In sum, there is basic support, from items embedded in the experimental survey, that moral conservatism is associated with a strong preference for leaders who exhibit low levels of integrative or deliberative complexity, who make decisions

without reconsidering them, who prefer to refer bills to one rather than many committees, who generally appear to think in a more rigid style. I do not think this single result is sufficient to conclude that I have fully verified a model which explains moral conservatism as a function of a psychological-needs-based attraction to sure-minded, categorizing leaders who themselves are driven by their cognitive style to take secular conservative positions. I merely claim that such a model was vaguely implicit in data prior to the introduction of this series of questions, and that this series of questions yielded data wholly consistent with the model. As with the warriorism hypothesis, more research can now be undertaken with greater confidence.

Chapter 13

After all, is Categorization Strength just Ambiguity Intolerance?

During the early stages of this research project, I made an informal presentation of some very preliminary findings (from student sample 1), appearing to confirm that categorization strength was related to ideology, to a group of students and professors. During the post-presentation Q&A session I was asked, "couldn't Categorization Strength just be Intolerance of Ambiguity?"

I replied that, yes, it could be, but that I hadn't yet included the AI scale in a survey. These results were preliminary and to that point, I had considered the primary "threat" variable—the variable which C-strength "might merely be"—to be Kruglanski and Webster's Need for Closure. At any rate, I said, I couldn't recall exactly what was contained in the AI scale. "Well, you'd better find out," came the admonishing reply. The suggestion was that I had entirely duplicated an existing measure. My entire research enterprise might be worthless, since we "already know" how Ambiguity Intolerance and ideology are related. Another admonishment suggested that "you will have to control for not only Need for Closure, but also Ambiguity Intolerance, Need for Cognition, Openness, and a whole host of other variables," and, presumably, have C-strength survive those controls untouched in predicting ideology, "before you can claim that categorization has anything to do with ideology."

While little academic progress could ever be made if we were required to expend the vast majority of our survey questions gathering data on every imaginable variable that had any shot at damaging our hypothesis, the original question is a legitimate one: is categorization strength another measure of Ambiguity Intolerance? And if so, does that necessarily render it a wasted and unnecessary measure, such that we can proceed in the confidence that we know just as much about ideological thinking without it as with it?

I will try to answer "no" to those questions with reasonable brevity here, as well as taking on another "threat" variable or two.

My first defense of the value of C-strength research is theoretical. However related C-strength and AI might be—and obviously they are—on their faces it's clear they don't measure the same thing. C-strength is designed to measure a person's quick perception about whether a thing or a relationship belongs in a category. As Shaffer, *et al.* (1973) write, Ambiguity Intolerance "may be viewed as a general tendency to see ambiguous material or situations as threatening." If one were designing a quantitative measure of that concept, as described, and came up with the basic categorization task I employ, colleagues would surely consider it an extremely odd approach to survey design.

As with most of the "need-for" –type variables,[1] I still don't think we know what the true, latent "stuff" is that the questions are measuring. What is the "stuff" that, when "high" in an individual, causes that individual to crave, or "need" to believe that there is a "right and a wrong way to do almost anything," that experts should have definite answers to questions, or that jobs whose duties are well defined are best?

It could be that perceptual categorization is that stuff. But even if so, this would be a terrible argument in favor of jettisoning C-strength in favor of the self-descriptive scales, for this would be an argument for dropping a measure of the thing itself, and substituting for it a measure of a secondary consequence of the thing. We might as well say we don't need Categorization Strength *or* AI to explain conservatism, because conservatism itself acts as an adequate proxy measure for them both.

Actually, I think the case that Conservatism is "just" Ambiguity Intolerance, or that Ambiguity Intolerance is "just" Conservatism—whichever way you want it—is a much more serious charge if we are determined to stamp out variable duplication. For let us face squarely that the measures of AI that we routinely use are, in fact, *measures of a non-political ideology*. When we say Conservatism is "caused" by Ambiguity Intolerance, we are saying a political ideology is caused by a less explicitly political ideology. A pretty good rhetorical case can be made that political conservatism is "just" a specific case of a more general Ambiguity Intolerance.

But of course this would not even begin to render Ambiguity Intolerance a variable without value, for our goal should *not* be to "prove" that variable A is not the same thing as variable B (and then show that they are nonetheless statistically related). Have we forgotten? Our goal is, or should be, to *understand phenomena*. For what it's worth, I *do* think that conservatism is, to a large extent, a special case of Ambiguity Intolerance. But I also understand ideology better when I know that these two variables are closely related—that conservatives, and not so much liberals, think giant undertakings are best chopped up into smaller, more manageable tasks, or those problems are best tackled which promise clean-cut resolutions. In fact, it's understanding things like this that led me to develop C-theory.

Similarly, I understand ideology more deeply still when I know that abstract drawings strike conservatives differently than they do liberals—as, for example, more representative of an "above-below" relationship—within five seconds of exposure. This points to just how "deep down" into the pre-deliberative foundations of cognition the roots of ideological thinking reach. Knowing that Conservatives prefer familiar restaurants more than liberals do is *not* the same thing as knowing they would perform this way on an abstract perceptual task.

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[1] Bochner (1965) in defining AI, actually did identify a "need for categorization" and suggested this was a component of AI. But even if we wanted to measure a person's intrapsychic pleasure in categorizing things, an abstract perceptual task such as my subjects performed would not be our choice of measure.

Let us return to the facial argument. It is easy to be taken in by the *name* of the scale: "Intolerance of Ambiguity." For when we categorize, are we not disambiguating? And when a participant clicks on the line separating the categories, indicating an item occupies some space "between the categories, or simultaneously belonging somewhat to both," is that participant not "tolerating ambiguity" right before our eyes? Sure, but while it's true that the categorization task cannot escape the obvious fact that it is measuring, literally and semantically, a kind of "tolerance" for "ambiguity," on its face the task just isn't anything at all like the Budner or MacDonald scales. It never asks people to describe themselves. It never asks people to endorse semi-ideological viewpoints or to agree or disagree on matters of opinion. It is far and away more clearly a measurement of *cognitive process*.

Of course then, the question should be whether AI is "just" a measure, and a downstream, causally posterior measure at that, of categorization strength, and even if it is—even if in this strained way the two variables "are just each other"—it is absurd even to *imply* that there is not something *extremely* valuable in knowing that Ambiguity Intolerance, this traitlike psuedo-ideological psychological variable that so well predicts various forms of political ideology, can be found in the very rudiments of object perception. In other words, if C-Strength is AI, then C-Strength should be regarded as an exciting new measure of AI which sheds new and valuable light on the entire AI phenomenon.

The truth is that simple structural-equation models where latent-variable A causes latent-variable B causes latent-variable C well may fit data less than perfectly when several of the variables are psychological constructs of the open-mindedness family, with scales practically inviting multiple cross-loadings. It's actually impressive that my models accomplish discriminant validity as well as they do (though AI is not in any of my SEMs). But I have come, as this research has progressed, to view the entire constellation of Openness-family variables, and even to a lesser extent the dispositional Extraversion-related variables (decisiveness, for example), as part of a grand phenomenon. Each of these variables seems to be picking up some "facet," of a *big thing*, and that thing is undeniably related to ideological thinking, and probably has been for at least tens of thousands of years.

The value in categorization strength and in the new measures I've introduced—particularly deliberative complexity and attributionism—is that they measure this big thing at a more rudimentary stage, when it's just generating basic perceptions. They get at cognitive rigidity before it has had a chance to coalesce into a pseudo-ideology, or into a value-system, or into a not-quite-political set of opinions, or into a love for "art museums," or into any of the numerous self-descriptive scales we reify into actual separate "things" and then use to explain ideology, but which are an awful lot further on their way to *being* ideology than perceptual categorization is.

Okay. Now, having conceded that there is a coherent way of thinking in which AI and C-strength can be thought of as "the same thing," but defended the use of both variables despite this, let me now demonstrate with data that, empirically, they are related but *not* exactly the same thing.

Student sample 1

Let us begin with student sample 1. I did not measure Ambiguity Intolerance using "actual AI items" from the Budner or MacDonald scales, for this dataset but I did ask a number of Need-for-Closure questions. These scaled together poorly, but did seem to divide into three separate factors—one a preference for simplicity, one a kind of decisiveness, and one a "need to know things now and quickly." The first and third of these seem like they might tap AI. Let's examine them all, however.

Correlations between the three closure scales and various measures of categorization strength—two general, the above-below measure, the home appliances measure, and the healthy/unhealthy-foods measure—reveal generally low correlations between closure and categorization, but in one-tailed tests there are a couple of significant ones, as shown in table 13.1. In particular, the preference for simplicity seems like it might be related to the appliances and food categorization measures and also to the general measures.

Is categorization strength nothing but Need-for-Closure's "preference for simplicity" facet? And is this nothing but Ambiguity Intolerance? While a correlation of 0.18 hardly establishes variable duplication, let us ask whether the simplicity facet of Closure, included in a regression predicting ideology, extinguishes the effect of categorization strength.

Table 13.1. Correlations between categorization measures and facets of Need for Closure, student sample 1

	General cat. strength	Cat. strength appliances / not appliances	Cat strength above-below / not above-below	Cat strength healthy / unhealthy food
Closure, preference for simplicity	0.17 (0.065)	0.19 (0.04)	0.04 (0.36)	0.12 (0.135)
Closure, need to know	0.04 (0.36)	0.08 (0.25)	-0.02 (0.89)	0.04 (0.36)
Closure, decisiveness	-0.08 (0.46)	-0.06 (0.58)	-0.02 (0.82)	-0.08 (0.46)

Significance tests one-tailed except grayed cells, two-tailed because signed in unexpected direction. Considering the number of grayed cells, it might seem there should not be an expected direction, but given that closure and categorization are both clearly measures of "cognitive rigidity," there is.

It should first be noted that the simplicity facet of closure is not significantly correlated with any dimension of ideology other than moral ideology, as shown in table 13.2 (while categorization strength and other cognitive-process variables have

typically predicted secular ideology). So it is moral ideology we are concerned with at the moment.

Table 13.2. Correlations of facets of Need for Closure with dimensions of ideology, student sample 1

	Fiscal ideology	Nativist tough / tender-mindedness	Militaristic tough / tender-mindedness	Moral ideology
Closure, preference for simplicity	0.03 (0.33)	0.08 (0.13)	0.02 (0.38)	0.18 (0.008)
Closure, need to know	0.03 (0.35)	0.05 (0.24)	0.12 (0.0499)	0.07 (0.16)
Closure, decisiveness	0.125 (0.044)	0.124 (0.045)	0.17 (0.007)	0.15 (0.019)

N = 187. Significance tests one-tailed.

But in a regression in which Closure$_{simplicity}$ is a control, an appliances-and-food categorization strength measure (the general C-strength measure which best predicts moral ideology) remains a significant predictor of moral ideology and a Sobel test does not reveal much evidence that closure "mediates" the effect of categorization on moral ideology (Sobel statistic of -0.06 ns, $p = 0.21$). See table 13.3. Of course, we are not concerned here with whether Closure actually mediates a real effect of Categorization Strength, which would mean that categorization strength is a quite worthwhile, causally prior variable to explore, but whether Closure is just a dramatically *better* measure of the same thing—which could look like strong mediation in a Sobel test.

Of course, it's worth noting that the preference for simplicity itself remains a very, very powerful predictor of moral conservatism in the regression—and it's findings like this which convince political psychologists that it's moral conservatism that's related to closed-mindedness (and I also believe it is, but in a special way). One of the most valuable aspects of Categorization research has turned out to be the revelation of the connection between cognitive rigidity or mechanicalness and other dimensions of ideology. From this dataset, then, it would appear that strongly categorizing things is a very fundamental part of a phenomenon which includes a preference for simplicity—but that the preference-for-simplicity aspect of this broad phenomenon (and in fact "preference-for" or motivational aspects of this phenomenon generally) is connected to moral ideology more closely than to other dimensions of ideology.

Table 13.3. Moral ideology (standardized) predicted by categorization and the simplicity facet of the Need for Closure, student sample 1, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization strength (standardized)	0.22 (0.10)	0.015
Closure, simplicity facet (standardized)	0.41 (0.10)	0.000
Participant sex (0=M, 1=F)	-0.44 (0.20)	0.03
Constant	0.14 (0.12)	0.259

$N = 82$; $R^2 = 0.24$

Significance tests one-tailed except for sex, constant

In short, this is all telling us something quite fascinating about similarities and differences between moral and secular ideology, and were we to have jettisoned C-strength upon seeing a significant correlation between it and a Need-for-Closure facet, we'd have lost an opportunity.

Turning next to those other dimensions of ideology, from the correlation table we see that the preference for simplicity is unrelated to them, but the "decisiveness" and "need to know" facets of Closure are related to military ideology, and the "decisiveness" facet alone is related to fiscal and nativist ideology. The general categorization measure is also significantly correlated with both fiscal and military ideology. Do the Closure facets extinguish the effects of categorization in regression analysis?

No. The two regressions of tables 13.4 and 13.5 indicate that categorization has its own role, separate from facets of Need for Closure—including facets that seem similar to an Intolerance of Ambiguity.

It is apparent then, that in Student Sample 1, the Need for Closure scale in its three facets did *not* function as a simply superior measure of Categorization. The two concepts, Closure and Categorization, are significantly related, but they act independently in regressions, and it must be said for Categorization that while it significantly predicted three ideological dimensions—moral, fiscal, military—the only facet of Closure to predict more than two was "decisiveness," which on its face looks nothing like Ambiguity Intolerance at all, is strongly correlated with

Table 13.4. Militaristic ideology (standardized) predicted by categorization and facets of Need for Closure, student sample 1, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization strength (above-below test, standardized)	0.28 (0.11)	0.005
Closure, need-to-know facet (standardized)	0.15 (0.11)	0.07
Closure, decisiveness facet (standardized)	0.14 (0.11)	0.09
Participant sex (0=M, 2=F)	0.07 (0.22)	0.76
Constant	-0.23 (0.13)	0.863

N = 82; R^2 = 0.12

Significance tests one-tailed except for sex, constant

Table 13.5. Fiscal ideology (standardized) predicted by categorization and decisiveness facet of Need for Closure, student sample 1, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization strength (above-below test, standardized)	0.26 (0.10)	0.007
Closure, decisiveness (standardized)	0.29 (0.11)	0.003
Participant sex (0=M, 1=F)	-0.28 (0.21)	0.193
Constant	-0.10 (0.13)	0.467

N = 82; R^2 = 0.17

Significance tests one-tailed except for sex, constant

Extraversion (r = 0.36, p = 0.0000), and which, for that matter is *positively* correlated with Openness to Experience (r = 0.21, p = 0.002), indicating that this facet of the

"Need for Closure" doesn't even slightly resemble the kinds of variables that critics argue render Categorization Strength superfluous.

Student sample 2

Of course I didn't measure "real" Ambiguity Intolerance in student sample 1, although I'd posit that in the Need for Closure scales I captured something closer to AI than many of the political psychology discipline's routinely used "proxies" capture of their respective targets. But I did measure AI using "real" AI questions for student sample 2, including selected questions from the Budner and MacDonald scales into an index with good reliability, $\alpha = 0.76$. But this scale didn't even correlate significantly with my Categorization strength measures, the highest correlation being 0.14, $p = 0.07$ one-tailed, this being the correlation between AI and the Categorization strength$_{tough-tender}$ measure.

This is not statistically significant, but one would be crazy to conclude "no relationship" from this. I have little doubt this correlation is an underestimate of what is a true relationship between Categorization and AI. The point is that they don't just look like alternate measures of the same thing. In a regression explaining tough-tender ideology, a Sobel test again fails to reveal significant "mediation" of Categorization by AI ($p = 0.19$). See table 13.6.

Table 13.6. Tough-tender ideology (standardized) predicted by categorization and Ambiguity Intolerance, student sample 2, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization$_{tough-tender}$ (standardized)	0.16 (0.09)	0.04
Ambiguity Intolerance (standardized)	0.40 (0.10)	0.000
Participant sex (0=M, 1=F)	-0.21 (0.20)	0.294
Constant	0.13 (0.13)	0.322

N = 98; R^2 = 0.20

Significance tests one-tailed except for sex, constant

Moreover, let us take a closer look at the abbreviated Ambiguity Intolerance scale in use for Student Sample 2. I have said already that it is "pseudo-ideological," that it is largely a measure of a not-quite-political ideology. Two of the items in particular seem to tap either ideology or categorization itself too directly for comfort. From the Budner scale, "there is a right and a wrong way to do just about anything,"

with its use of the words "right and wrong" with their strongly prescriptive and moral connotation, surely evokes modern political ideology. And to a lesser extent, there is the idea from the MacDonald scale that "an expert who doesn't come up with a definite answer probably doesn't know much," which seems partially to tap directly into tough-mindedness.

I created a new AI scale, then, "scrubbed" of these two items. The new Crohnbach's α was 0.73, still reliable. Its correlation with the original AI scale was 0.96, so we can be confident that it is still measuring "real Ambiguity Intolerance." When it, rather than the original, more ideology-flavored AI scale is used as a control for categorization, we get the regression of table 13.7 and a Sobel statistic of -0.01, p = 0.58, absolutely no evidence of mediation at all.

Table 13.7. Tough-tender ideology (standardized) predicted by Categorization and Ambiguity Intolerance scrubbed of obvious ideological questions, student sample 2, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization$_{tough-tender}$ (standardized)	0.20 (0.09)	0.018
Ambiguity Intolerance (standardized)	0.40 (0.10)	0.000
Participant sex (0=M, 1=F)	-0.21 (0.20)	0.282
Constant	0.14 (0.13)	0.307

N = 98; R^2 = 0.20

Significance tests one-tailed except for sex, constant

Now, Ambiguity Intolerance still explains much of tough-tender ideology—twice as much as categorization, which is a surprising finding in itself, considering the conventional wisdom that this was supposed to explain moral ideology alone. (Note that AI's coefficient has not changed either.) But AI does not appear to be the same thing as Categorization. It could be protested that by removing the ideological questions from the AI scale, I have damaged the content validity of the AI measure—that is, I've curbed the AI measure so that it no longer measures "all the aspects" of the variable of interest. That's true, but anyone adopting this line of argument must simultaneously give up AI as a variable of any use in explaining ideology, for they are arguing that ideological concepts are themselves indispensable components of AI for content validity purposes.

It's actually *very* convincing to observe the table of correlations between the Categorization$_{tough-tender}$ measure and the various components of the AI scale. Categorization strength is somewhat related to these two scrubbed items, but, apparently, quite unrelated to the rest of the scale, as shown in table 13.8. This is always a danger in using additive measurement indices: however "reliable" they may seem by measures such as alpha, the latent construct can always appear to be related to some other latent construct *as a result of particular items*. So what is it that Categorization is related to? Is it Ambiguity Intolerance? Or is it answers to two ideologically-tinged questions drawn from the AI scale?

Table 13.8. Correlations between categorization$_{tough-tender}$ measure and Ambiguity Intolerance questions used for Student Sample 2

Ambiguity Intolerance question	Corr. with Cat. Strength measure (p – value)
From Budner scale:	
Expert who doesn't come up with definite answer probably doesn't know much	0.23 (0.02)
Good job is one where what is to be done and how always clear	0.03 (0.74)
More gets done tackling small, simple problems than complicated ones	-0.01 (0.92)
What we're used to preferable to what is unfamiliar	-0.01 (0.89)
Person who leads even, regular life has much to be grateful for	0.04 (0.70)
From McDonald Scale:	
There's a right and wrong way to do almost everything	0.22 (0.03)
Nothing gets accomplished unless stick to basic rules	0.14 (0.28)
Vague and impressionistic pictures have little appeal for me	0.16 (0.12)
Before exam, I like to know how many questions there will be	0.05 (0.60)
I don't like to work on a problem unless possibility of clear-cut answer	0.01 (0.93)

N = 100; Significance values all two-tailed

And finally, in what direction does causality run now? Does perceptual categorization cause people to answer that experts should come up with definite answers? Or does an abiding belief that experts should produce definite answers, and that there's a right and wrong way to do things, cause people to conscientiously live up to their belief systems while performing abstract categorization tasks? I'll concede that the latter of these two options is not *completely* implausible, but the former sounds theoretically much more pleasing.

Incidentally, I will not waste our time with the fiscal-ideology results here, but they were conducted and they are almost entirely identical to the tough-tender results. The only difference is that neither categorization nor AI are quite as strong predictors of fiscal ideology as of tough-tender, but both remain significant in a regression, and there is no evidence of mediation. Moreover, the same kind of clarification occurs when scrubbing ideology from the AI measure.

As for moral ideology, it is strongly predicted by Ambiguity Intolerance, but only very weakly and nonsignificantly by categorization strength in this dataset, as shown by the regression of table 13.9. So again, we have AI and Categorization Strength functioning differently. Whereas AI remains about as powerful a predictor of moral ideology as of other dimensions of ideology, the Categorization strength drops in its ability to predict moral issue positions.

The result of table 13.9 strikes me as entirely consistent with a theory that secular conservatism is largely about seeing the world in certain, sharp, and highly defined (categorical) terms—which the categorization strength, deliberative complexity, and attributionism measures pick up very well—while moral conservatism is largely about *seeking* a more certain, sharp, or confidently categorized internal map of the outside world—the kind of certainty that religion offers, and the kind of *preferences and needs* which the AI scale is terrific at measuring.

On the other hand, if fiscal and tough-minded conservatives *have no need* for disambiguation because they already have it in spades, I can't imagine how the AI scale would pick up on that nuance—they'd just look like moral conservatives in terms of their levels of AI. But more fundamental cognitive process variables can reveal this difference and inform theory. That's exactly what I believe my new variables are doing here.[2]

Table 13.9. Moral ideology (standardized) predicted by categorization and Ambiguity Intolerance scrubbed of obvious ideological questions, student sample 2, OLS coefficients

Independent variable	Coefficient	p – value

[2] It should be noted, however, that deliberative complexity *does* predict moral liberalism in a regression where AI is controlled for, providing an indirect pathway by which categorization strength may exert some influence on moral conservatism regardless of individuals' levels of AI.

	(standard error)	
Categorization$_\text{tough-tender}$ (standardized)	0.096 (0.093)	0.15
Ambiguity Intolerance (standardized)	0.30 (0.10)	0.002
Participant sex (0=M, 1=F)	-0.17 (0.20)	0.397
Constant	0.07 (0.14)	0.585

N = 98; R^2 = 0.10

Significance tests one-tailed except for sex, constant

This is quite a strong refutation of the idea that Categorization Strength is a worthless measure especially when we consider that the criticism of C-Strength on AI grounds largely amounts to a suggestion that Categorization research is really Authoritarianism research in disguise. That C-Strength predicts secular ideology more consistently and more strongly than it predicts moral ideology indicates that C-Strength study is closer to being research on precisely that component of ideology that is *not* Authoritarian.

Tallahassee adult sample

There is no doubt that critics wishing to argue that Categorization strength is an unnecessary duplicate of Ambiguity Intolerance will draw more comfort from the Tallahassee sample. Although C-strength's unique function among the students is sufficient to justify its place in ideology research, among the subsample of Tallahassee adults who answered the AI series (N = 55, roughly half the sample) Categorization Strength is very strongly related to AI, as table 13.10 shows. is scrubbed of the two most ideological questions. The tough-tender ideology scale's α (0.76) is only a little higher. Incidentally, 0.58 is exactly the correlation between tough-tender ideology and *self-identified liberalism-conservatism*. Ambiguity Intolerance predicts ideology as well as self-identified ideology itself? This surely points to the likelihood that Ambiguity Intolerance in the Tallahassee sample is functioning as much as a proxy measure for ideology as a "cause" of it. At very least we can certainly say based on these correlations that, however justified an accusation that "Categorization Strength is just Ambiguity Intolerance," it's even more justifiable to argue that tough-minded conservatism itself, based on issue positions, is "just Ambiguity Intolerance" too.

Table 13.10. Correlations of Ambiguity Intolerance with issue-position-based dimensions of ideology and categorization measures, Tallahassee adult sample

Ideology or cat. measure	Correlation with Ambiguity Intolerance	Correlation with AI, scrubbed of more blatant ideology
Fiscal ideology	0.34 (0.005)	0.33 (0.006)
Tough-tender ideology	0.61 (0.0000)	0.58 (0.0000)
Moral ideology	0.29 (0.016)	0.27 (0.023)
Categorization$_{general}$1	0.23 (0.046)	0.12 (0.20)
Categorization$_{general}$2	0.29 (0.015)	0.17 (0.11)
Categorization$_{subsamples}$	0.39 (0.0017)	0.31 (0.012)

N = 55; one-tailed significance tests in parentheses

First, though, note the stunning correlation between of 0.61 between AI and tough-minded *ideology*, with the correlation holding at a robust 0.58 even when the AI measure

At any rate in the Tallahassee sample, when we try to explain tough-tender ideology in a regression containing both Ambiguity Intolerance and Categorization, the effect of Categorization is pretty much nil—see table 13.11. The same thing happens when we substitute fiscal ideology as the dependent variable in the regression.

Partly, but not entirely, this is the result of an idiosyncrasy in the sample: the zero-order relationship between Categorization Strength and ideology happens by chance to be considerably lower among the half who answered the AI series than among the half who didn't, helping to create the appearance that AI is "extinguishing" the effect of Categorization, when chance is actually doing much of that work. Nonetheless, AI reduces the coefficient on categorization substantially, with the Sobel statistic significant at $p = 0.04$ for the regression shown above in table 13.11. For fiscal ideology, the Sobel statistic is not significant at all ($p = 0.31$)—but in zero-order correlations Categorization simply doesn't predict fiscal ideology very well at all for the portion of the sample that answered the AI series, while predicting it quite well for the 58 subjects who did not.

Table 13.11. Tough-tender ideology (standardized) predicted by categorization and Ambiguity Intolerance, Tallahassee adults, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Categorization$_{subsamples}$ (standardized)	0.078 (0.12)	0.25
Ambiguity Intolerance, scrubbed of ideology, (standardized)	0.58 (0.12)	0.000
Participant sex (0=M, 1=F)	-0.12 (0.23)	0.608
Education (0 to 1)	0.29 (0.42)	0.491
Race (0=white, 1=nonwhite)	-0.34 (0.31)	0.279
Constant	-0.21 (0.30)	0.492

N = 55; R^2 = 0.36

Significance tests one-tailed except for demographics

We should not omit a discussion of deliberative complexity either, which is designed explicitly as an intervening variable between categorization and ideology—and itself is surely better "scrubbed" of ideology than is Ambiguity Intolerance, since it does not ask subjects to endorse an opinion, but rather to endorse a *reason* for a relatively uncontroversial opinion. In a regression explaining fiscal ideology using both DC and AI, both perform about equally, and both are significant, as shown in table 13.12, while table 13.13 shows that explaining tough-tender ideology, DC is somewhat outperformed by AI, but overall a similar result is obtained.

Note additionally that the correlations in table 13.14 imply that DC is probably slightly closer to capturing the deliberative consequences of categorization strength than ambiguity intolerance is. So if AI is "just" categorization strength, then so must deliberative complexity be, but like AI, the measure is constructed so as to render it facially obvious that DC is not C-strength—and without the name "Intolerance of Ambiguity" we aren't tempted to wonder whether it might be.

Read together, these findings suggest to me that DC mediates the effect of categorization on fiscal and tough-tender ideology in the southern sample, while AI mainly acts as a proxy measure of ideology itself, especially of the tough-tender dimension, although it's extremely valuable as a qualitative illustration of the overall character of ideological thinking left and right.

Table 13.12. Fiscal ideology (standardized) predicted by Deliberative Complexity and Ambiguity Intolerance, Tallahassee adults, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Deliberative Complexity (standardized)	-0.23 (0.13)	0.041
Ambiguity Intolerance, scrubbed of ideology, (standardized)	0.28 (0.14)	0.027
Participant sex (0=M, 1=F)	-0.37 (0.25)	0.143
Education (0 to 1)	0.74 (0.46)	0.116
Race (0=white, 1=nonwhite)	-0.36 (0.34)	0.298
Constant	-0.29 (0.33)	0.382

$N = 55$; $R^2 = 0.25$

Significance tests one-tailed except for demographics

Table 13.13. Tough-tender ideology (standardized) predicted by Deliberative Complexity and Ambiguity Intolerance, Tallahassee adults, OLS coefficients

Independent variable	Coefficient (standard error)	p – value
Deliberative Complexity (standardized)	-0.28 (0.11)	0.009
Ambiguity Intolerance, scrubbed of ideology, (standardized)	0.48 (0.12)	0.000
Participant sex (0=M, 1=F)	-0.14 (0.22)	0.533
Education (0 to 1)	0.28 (0.39)	0.486
Race (0=white, 1=nonwhite)	-0.24 (0.29)	0.425
Constant	-0.18 (0.28)	0.540

$N = 55$; $R^2 = 0.43$

Significance tests one-tailed except for demographics

Table 13.14. Correlations of categorization measures with Deliberative Complexity and Ambiguity Intolerance scales, Tallahassee Adult Sample

	Categorization$_{general}$1	Categorization$_{general}$2	Categorization$_{subsamples}$
Ambiguity Intolerance, full scale	0.23 (0.046)	0.29 (0.015)	0.39 (0.002)
Ambiguity Intolerance, scrubbed of blatant ideology	0.12 (0.20)	0.17 (0.11)	0.31 (0.012)
Deliberative Complexity	-0.33 (0.007)	-0.42 (0.0008)	0.31 (0.011)

N = 55 (only those who answered AI series); One-tailed p – values in parentheses.

Finally, we have in the Tallahassee sample a replication of a student result: moral ideology is significantly related to Ambiguity Intolerance (r = 0.27, p = 0.023 one-tailed with ideology-scrubbed measure), but not to categorization strength (r = 0.13, p = 0.09 one-tailed with the best C-strength predictor of moral ideology). Moral ideology is also not as closely related to the other "cognitive process" variables, attributionism and deliberative complexity, as are the other dimensions of ideology: $r_{moral\ ideology-DC}$ = -0.13, p = 0.09, one-tailed; $r_{moral\ ideology-attributionism}$ = 0.15, p = 0.06, one-tailed (N = 112 in each case); meanwhile both fiscal and tough-minded ideology are strongly and significantly correlated with both these variables, with rs ranging from 0.20 to 0.39, all p values < 0.016.) This is consistent with the notion that moral conservatism is more motivational in origin—moral conservatives may well seek the certainty, often from religion or from moral edicts such as comprise morally conservative ideology, which fiscal and tough-minded conservatives come by more naturally.

This model cannot be entirely tested here, but the data do seem to draw general outlines of it. But like much of the understanding these data have yielded, without the new variables introduced in this dissertation, this possibility would never have been spotted. It is, then, quite a good thing that pursuit of categorization strength was not dropped based on suspicions that it was just Ambiguity Intolerance in disguise.

Finally, recall from table 7.24 that another way in which Ambiguity Intolerance (as with Big-Five Openness) does not behave in the same way as Categorization Strength, or like deliberative complexity or attributionism either, is that the former, more "trait-like" variables appear to be more related to levels of education than the latter, more "cognitive process"-type variables are, suggesting that

the cognitive process variables are, indeed, better at measuring fundamental, "hard-wired" processes that are more difficult to change at their roots.

Chapter 14—conclusion

Where Categorization Theory has brought us

We've now seen enough interesting results to say for sure that Categorization-Strength research is a promising avenue. I regard this dissertation as a sort of first step: some illuminating cognitive-process measurements have been found, and theory has been refined to the point of generating more specific hypotheses than I began with.

In conclusion, I simply ask two questions: What have we learned? And where are we going?

What have we learned?

The first and most obvious advance is the demolishing of the notion that secular ideology is not connected with psychology in precisely the way that it so obviously is. Authoritarianism research has certainly left its mark: when we're talking about personality and ideology, in America we're talking about "social-moral" ideology. In particular, we're accustomed to thinking of moral conservatives as "closed-minded." Easily the greatest surprise I've encountered is that the psychological individual differences for which I went searching seem to explain secular ideology better than moral ideology.

It may not be that closed-mindedness is the same thing as the cognitive-rigidity phenomenon to which I've referred throughout this dissertation, but prior to this work it's hard to imagine scholars wouldn't have agreed that cognitive rigidity, as measured here in numerous ways, was very much like what they had in mind when talking about the closed mind. Well, the results really couldn't be any clearer on cognitive rigidity. It's powerfully connected to fiscal ideology and even more powerfully connected to a tough- and tender-minded ideology which is in turn strongly correlated with fiscal ideology, and less strongly correlated with moral ideology.

Over and over, a parade of behavioral asymmetries, traits and cognitive-process variables which drew the contours of a cognitive flexibility-rigidity phenomenon predicted secular ideology very well—and moral ideology less well. Controlling for "social" liberalism and conservatism generally did not extinguish the effects of cognitive flexibility on secular ideological opinion formation. Moreover, there seems to have been a pattern such that the more purely cognitive-process-oriented the psychological variable, the better it predicted secular ideology *compared to* its performance predicting moral ideology.

So ingrained is Authoritarianism and social-ideology research in our intellectual heritage that one wonders whether something is dreadfully wrong not with my psychological measures, but with my measure of moral ideology. If only I'd measured moral ideology correctly, I'd see that it is much more powerfully

determined by psychology than secular ideology. But this is almost certainly not the case, because the moral ideology measure performs generally as it has in previous research—it just hasn't previously been subject to prediction by abstract cognitive-process variables. For example, Ambiguity Intolerance strongly predicted moral conservatism multiple times. At least one facet of Need for Closure did too. And Authoritarianism, as meager a measure of it as I had, did too—while failing to predict secular ideology, just as it should have. In student sample 1, my three-item measure of Authoritarianism, based on questions about child-rearing values such as those used by Feldman and Stenner (1997), $\alpha = 0.57$ was uncorrelated with fiscal and tough-tender ideology (rs = 0.02 and 0.06, respectively, both $ps > 0.45$), but it was strongly correlated with moral ideology, r = 0.27, $p = 0.0001$. All exactly as it should be.

The new variables I used are cognitively more basic than the trait scales that dominate personality-ideology research, and make for better causal variables. With these new variables, we are closing in on revealing actual *origins* of ideological thinking. It certainly appears that there is something about a cognitive style marked by perceiving objects, concepts and relationships as categorized or compartmentalized which drives people to take conservative positions, especially on secular issues. There was some evidence, too, that the mechanism by which this happens involves the translation of cognitive-perceptual categorization into a deliberational style marked by a sort of mechanical directness and concreteness—a style of logic which focuses on a few important and very closely related elements and "pares the tree" of distal concerns, outputting straightforward and easy-to-understand positions.

Evidence that this cognitive style in fact generates secular conservatism exactly as I've described it is only partial at this stage: I offered participants examples of what a certain kind of "low-deliberative-complexity" thinking would look like, and conservatives more than liberals selected it as representative of their own deliberations, while liberals selected the higher-complexity examples. However, this does not show that liberals and conservatives really think this way spontaneously, without my prompting them. In future research, open-ended items should be used to gauge the kinds of conscious deliberations liberals and conservatives are engaged in, and if we believe some "deliberations" occur peripherally or subconsciously, clever measures will have to be devised to capture those in action too.

The finding that secular ideology is connected with cognitive flexibility and categorization is interesting insofar as it upends conventional wisdom. But more interesting, perhaps, are questions about whether rigidity only pushes people toward recognizably conservative positions under specialized contexts. I suspect most political psychologists will continue to accept the argument of Kossowska and Van Hiel that the connection of closed-mindedness with pro-hierarchy views is a unique feature of western democracies of the last few decades, and that there is no reason to expect that the cognitively rigid would endorse these or any particular other viewpoint in another time and place. I have given my reasons to expect otherwise, but have yet to make an empirical showing of it.

What we can say about this, though, is that in my data, strongly categorizing cognitive styles were clearly related to *nonpolitical* attitudes and behaviors that have implications for *political* ideology that are awfully difficult to deny. For example, the cognitively rigid are more likely than the cognitively flexible to blame Britney Spears for her own problems, or to think bullied kids on a playground are responsible to stop the bullying, or to see people's accomplishments as disconnected from the support of the community or as attributable to simple traits inherent in the person, or to find opposing teams' sports fans less likable. It's hard to imagine that this kind of worldview would *ever,* in any society, square with a more egalitarian or value-Universal kind of political ideology. But an empirical showing will be required to convince most.

If cognitive flexibility causes secular liberalism, what kind of answer does this provide to Converse's "nonattitudes" concept? Even if flexibility only causes egalitarian ideological attitudes in the context of contemporary democracies, we surely are compelled to accept that even the most politically unaware citizens are more likely to adopt the "correct" positions for their cognitive style if given a chance. Perhaps this "pre-ideology" concept still leaves intact the possibility that some people, the entirely uninitiated, can generate policy positions entirely at random. However, with psychology introduced, we are not *compelled* to accept Converse's conclusion that the American population must be composed of exactly two types—random opinion generators and people who never change their minds. Ideological opinion can be treated as having, for each person, a mean and a distribution, with cognitive style determining the mean. What we have established very clearly is that cognitive style *does affect that mean*. There is some (inconsistent) evidence, however, that cognitive style may have more traction to affect opinion when political knowledge is higher. So while the answer to Converse in the main is that a "nonattitudes" view probably underestimates how systematically ordinary people think about politics, perhaps Converse and C-theory can coexist. Some people may be both nonattitudinal and pre-ideological simultaneously, without this fact being a violation of basic logic.

More interesting than the rather firm conclusions reached about secular ideology is the direction the research took regarding moral ideology. When the research project began, I had a goal of showing that fiscal and social conservatives were "natural" rather than "convenient" or historical-path-dependent allies, and my method was to be that I would show that—surprise!—fiscal conservatives are just as cognitively rigid, just as categorizing as we already knew moral conservatives to be. I did not imagine that the greatest threat to my "natural allies" hypothesis would be the weakness of a moral ideology-cognitive rigidity relationship, but that is exactly what emerged, and it did so in every single dataset. It is not an accident of sampling error.

Nor is it a region-specific effect, even though there were important differences between the northern students and the southern adults. Because the various dimensions nearly collapsed to one in Tallahassee, late in chapter 3 I suggested that cognitive rigidity measures such as C-strength would predict moral conservatism

much better in the south than in the north. But they didn't. Categorization Strength, Deliberative Complexity and attributionism were relatively weak predictors of moral ideology in both regions.

This doesn't mean moral ideology isn't related to open-mindedness, of course. The more trait-type variables, the ones which ask people not to perform cognitive-flexibility-measuring tasks, but to endorse positions and indicate their opinions about life, tend to perform much better, and as expected, in predicting moral ideology: Ambiguity Intolerance, Openness (sometimes) and certain facets of Need for Closure.

I believe we have to consider the hypothesis that that the "social" and "fiscal" ideologies are not only *not* orthogonal, but that moral and secular conservatives are natural allies, to be mainly supported on psychological grounds. This is the case even though it appears that moral ideology "runs on a different operating system" than secular ideology. The obvious psychological differences between the moral and secular dimensions don't even come close to suggesting that the conventional wisdom was right about the supposedly orthogonal nature of the major dimensions, for what researcher has ever argued that moral and secular ideology are orthogonal on grounds that only *secular* conservatives are cognitively rigid?

Hence, one of the most exciting developments of this enterprise is an ironic one: the dimension of ideology about which my data confirmed the least—moral—is the dimension about which my data probably *suggested* the most, and so there is no shortage of newly generated questions for future research about moral ideology. There is simply no question that moral ideology now appears both a more *motivational* and a more *cultural* phenomenon than secular ideology is. It appears more motivational, first, because the motivational variables—AI and NFC—predict it well, while the more purely cognitive ones don't. The Jost team may well be right: moral conservatives might find comfort for their fears and anxieties in conservative ideas. Recall that while secular conservatives rated themselves as significantly less fearful than liberals (and hence have little anxiety in need of "relieving"), moral conservatives were no less fearful than liberals. Moral ideology also appears more motivational in that moral ideologues, more even than secular ideologues, appear to crave *leaders* who themselves appear to possess a great deal of certainty. This looks an awful lot like a *seeking* of certainty, not necessarily a possessing. It also, one might add, looks like a psychological precursor to "Authoritarian submission."

A subtly amazing thing happened to on the final two days of my work on this dissertation that perfectly illustrates this pattern. I have been doing my work at a lovely Tallahassee coffeehouse where dozens of other people, laptops in tow, also find a wonderful atmosphere to write and study. I've become friends with two of the other regulars—and as it happens, one of them is a liberal, and the other is a conservative—on all issues, but most strongly a deeply Christian moral conservative.

My conservative friend is one of the most intelligent, best-educated people I know. Considering that he is a non-academic, he is amazingly well-versed in philosophy, neuroscience, and evolutionary theory, and not rigidly judgmental about any point of view with which I've presented him. Indeed, he seems to have been well familiar with every idea I've brought up. He is curious—a knowledge-seeker. I can't

imagine he would appear anything other than maximally open on a personality inventory. Our conversations are stimulating, fun, and mutually respectful.

On my next-to-last day of editing this manuscript, my conservative friend and I were talking about how people, in the context of a policy debate, form opinions about things in which they are not experts, and when they know they don't have sufficient expertise to make a good decision for themselves. He said, "I look for a certain cue when I'm watching a policy debate. I look to see which side seems the most confident in their arguments, the most self-assured. That's a sign that their idea is probably the better one."

Just the next day—yesterday, as it happens—when I was wrapping things up, my liberal friend—also a very well-educated retired man who, likewise insatiably curious, is always reading a fascinating book—he and I were in a conversation about how people make decisions. On his own, he brought up the notion of experts in a debate! He said, "When I'm watching a debate, I always think the side that's certain, that's absolutely convinced that they're right—they're probably the ones who are wrong. The people who are less certain—they seem like they're more aware of the other side's point of view, and they've taken it into account, so I'd expect them to be more likely to be right."

What can we say about these consecutive episodes except that, while numbers are indispensable, they'll never measure up to anecdotes for illustrating a point.

Not only is moral ideology more motivational. Moral ideology also appears to be relatively a more cultural phenomenon than the secular dimensions are. In each dataset there was evidence that psychological variables affected secular-ideological *opinions* more strongly than they affected ideological self-identification. But also in each dataset, this tendency was reversed for moral ideology. Morally conservative opinions and morally conservative self-identification were typically about equally determined by psychological variables, with *self-identification* just barely more powerfully determined in each dataset. This suggests that, while psychology pushes people more directly toward their positions on secular issues, in the moral-ideology case people are more likely to adopt the beliefs that conform to their self-identity, presumably through learning from a social group or church congregation.

It's truly no wonder, since our discipline has for decades used predominantly self-identification measures to measure ideology, that the undeniable psychology-*secular* ideology connection has been largely obscured.

Where are we going?

For future research, the most urgent need is to advance understanding of moral ideology by developing more thorough tests of this new, fuller theory of moral ideology that has emerged from the research. That theory essentially holds that moral ideologues, craving certainty, fall into the hands of strongly categorizing leaders, who tend to be fiscally ideological—and that they are more willing than other psychological types to simply adopt the positions of their social group. We have the pilot-level finding that moral conservatives prefer extremely decisive leaders, but the

entire model is not yet tested, nor is the "preference for a categorizing leader" measure well refined.

Nor does the theory specify where a "craving of certainty" originates, or even, at a level of rigor similar to the specification of C-strength as inhering in associative networks, what a need for certainty even *is*. I would not accept a definition by unobservable intrapsychic perceptions of "discomfort with uncertainty."

The next most urgent need is to further refine a number of extremely promising new variables introduced in the research program. Actually, I'm overjoyed with how many of my new variables did in fact perform as expected, when a wasteland of null coefficients was rather what I feared.

The most exciting new measure I have in hand is undoubtedly deliberative complexity. Although DC is not brand-new as it is based on Tetlock's idea, measuring it using closed-ended scales was most productive. Fair alphas were achieved with only four items—the first and only four I have yet created. More items should be created, and poor performers jettisoned to improve the scale. I should experiment with reverse-coding some items, too. This variable aided immensely in the finding that secular ideology is affected by categorization strength largely *via deliberational style*, and not simply because outgroup members are categorized more strongly, and probably represents the best characterization I have of how liberals and conservatives think. (Although some of the high- and low-complexity essays participants read showed promise in this regard, too.)

The attributionism series needs additional refinement too. This measure is almost as promising as DC, but is even less developed, is further from flowering into a mature, well validated measurement of cognitive style.

Almost too-easily forgotten is the series of questions about how people understand terms which are elemental to democratic politics. We've seen evidence that liberals and conservatives may understand the terms "property," "freedom," and "citizenship" to mean different things. If this finding is replicated with better-refined scales, there is simply no question that this represents a promising conduit by which individual differences in perceptual-cognitive style affect opinion formation. While the three scales used so far desperately need refinement, this approach is exciting because there is no shortage of "elemental terms" upon which people's grasp of politics is based. I have made much of people's more or less "mechanical" application of concepts of reward and punishment; so why should different people not understand the very words "reward" and "punishment" to mean substantively different things, depending on their levels of Categorization Strength? Other good candidate terms which spring to mind are: "deserve," "incentive," "equality," …there is no shortage.

The attempt to manipulate categorization strength met with unexpected, and mostly disappointing, results. But it had more than zero effect, and this endeavor should not be abandoned. Ideology was quite salient during the experiment as conducted. It is necessary to investigate how a categorization manipulation may affect

attitude responses when ideology is not a major focal point of the questionnaire. When, say, people's level of American-ness is salient, will a categorization manipulation make aliens seem more alien? This would almost certainly be a "conservatizing" effect. When people are focused on their personal goals, will a categorization manipulation produce a stronger perception that their efforts and potential rewards are more tightly linked? This would almost certainly be a "conservatizing" effect too. And so in future iterations of the experiment, I must manipulate not only C-strength, but the salience of various life concerns *other* than ideology.

The basic Categorization task itself probably needs additional refinement. Recall that it is common that the modal response to a category-set is for participants to categorize every single object presented to them. The obvious implication of this fact—a probable ceiling effect—must be dealt with through refinements of the measure, such as finding additional objects that are good candidates for "clicking on the line," or otherwise encouraging subjects to click on the line more often.

Moreover, an advanced phase of research much test whether categorization strength is manipulatable not just via reverse-categorization tasks as I administered in the experiment, but via real-life environmental factors such as threat, induced boredom and routinization, or the presence of confederates who themselves appear to categorize more or less strongly.

Finally, I have argued that Categorization Strength is an automatic phenomenon. Indeed, I've argued that it occurs unconsciously, at the early, perceptual level of cognitive function. C-theory would be immeasurably strengthened by a showing that individual differences in Categorization Strength can be detected at the implicit level—that people can be found to categorize objects more or less strongly without even realizing they are being presented with a classification task.

In fact, just such a test was begun for this study, but is not reported here. In a semantic priming task, subjects were primed subliminally with category names, and shown, after a stimulus-onset asynchrony, target words that varied in their "centrality" to the category, with the prediction that conservatives, strong categorizers, would, relative to liberals, show either clear facilitation or clear lack of facilitation depending on whether target words were in or out of category. Liberals, by contrast, were expected to show gently declining levels of facilitation as target words drifted toward the periphery of the category.

Unfortunately, the experiment failed and was terminated after only 60 subjects because almost no facilitation was achieved for any words, including unambiguously in-category words, and regardless of subject ideology. Perhaps the exposure and SOA times will have to be tweaked before any results can be obtained.

At very least we have a tiny amount of reaction-time data that suggests conservatives may categorize things faster than liberals do—again, though, only secular conservatives, which lends confidence that there is something "really going on" with the entirely abstract measure. This result too desperately needs replication.

Without doubt, additional tests of the ability to detect categorization's unconscious operation will be necessary.

After all this, C-theory is really just getting off the ground. We now know Categorization strength can be measured, predicts ideology, and is part of a broad constellation of cognitive flexibility-and-rigidity variables which also predict left-right ideology in expected directions. We know it predicts secular ideology better than moral, but there is reason to believe it may still be part of a story that unifies the moral and secular left-right dimensions.

C-theory has a promising future.

After all, only in its adolescence, it has already, I think, put quite a dent in the conventional wisdom.

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