

Folk Theory of the Social Mind: Policies, Principles, and Foundational Metaphors

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Abstract

A polarization has developed in American political debates concerning the nature of society as a rational agent that implements policies to govern individual behavior. As analyzed by Lakoff, the reasons for discord are not entirely based on logical consistency, but originate in radically different moral principles based on metaphors, values, and faith. How people attend to alternative views, handling disparity, ambiguity, and exceptions in political debates constitutes a mode of reasoning—favoring facts or moral principles—that is part of the world view being debated. This paper explores the idea that both the conservative (defined categories, rule-based) and progressive (open categories, empathy-based) modes of reasoning are stable and tenaciously held because they are a *cognitively functional, socially provided and reinforced means for making conceptual systems coherent*. Furthermore, the liberal-progressive and conservative world views may relate to individual *neural biases in how conceptual discord is managed*, involving assimilation (joining) or disjunction (splitting) of categories.

Introduction

“Self-government relies, in the end, on the governing of the self. That edifice of character is built in families, supported by communities with standards, and sustained in our national life by the truths of Sinai, the Sermon on the Mount, the words of the Koran, and the varied faiths of our people.”

George W. Bush, *Inaugural Address*, January 20, 2005

This paper considers the implications of Lakoff’s *Moral Politics* for theories of conceptual change. At issue is why two radically different metaphorical systems (world views) developed and are stable within substantial subpopulations of the present American society. Social, psychological, and neural factors that inhibit conceptual change are considered.

In cognitive science research, the combination of “social” and “mind” commonly refers to mental experience and learning of an individual person (viz, “the mind in society,” Vygotsky, 1978). This notion is certainly central in the analysis presented here. However, the phrase “social mind” here refers to people’s understanding and theorizing about how society should work if it is to act as a rational, collective agent. This is a “folk theory,” not academic, but rather an everyday understanding articulated by, elaborated upon, referred to, and argued for by ordinary members of society.

The folk theory of the social mind is not a set of isolated political opinions, but a system of thought that relates causal (moral) principles to social policies (e.g., concerning

abortion and welfare) that embody how society should categorize problematic situations and act rationally to shape the behaviors of its members. In turn, this belief system incorporates a folk psychological theory of individual motivation and learning.

In analyzing Lakoff’s work in this way, pointing out the folk theory of the social mind as an organizing framework for developing social policies, I am presenting a kind of ethnomethodological analysis (Heritage, 1984). In articulating and debating social policies, people are framing and prioritizing social problems (e.g., laziness vs. poverty, insects in crops vs. dangerous genetic modifications) and how individual, governmental, and corporate behaviors will be evaluated (e.g., by the bible, global law, science). At issue is how “society” should reason and what cultural knowledge (e.g., moral principles of nurturance, self-discipline, hard work) should be drawn upon to define the nature of social problems (e.g., abortion) and how they should be resolved.

I assume here that Lakoff’s analyses are accurate and build broader and deeper theories upon the data he provides: 1) The modes of reasoning constitute *alternative theories of the utopian society* (Mannheim, 1936) as a collective, rational agent that individuals assimilate in their identity and reproduce in word and deed. 2) These modes of reasoning are *cognitively and socially functional strategies* that use a moral context to make social concepts more or less well-defined and society more or less rule-governed with more or less strict interpretations (i.e., theories of the social mind deal differently with the flexibility of conceptualization and written laws). 3) Theories of belief revision for political debates need to explain how a statement is viewed as being information (a claim meriting attention) and how the activity of debating is itself shaped by the notions of “the enemy” and “evil” in a theory of the social mind.

Lakoff’s analyses are specifically about American politics, so this paper should only be viewed as a case study using this data. However, the framework presented can be readily tested for generality given data about political discourse in other countries.

Subsequent sections of the paper provide a synopsis of Lakoff’s *Moral Politics*, discuss the belief structure of a theory of the social mind, argue that the opposing political world views have a functional cognitive and social basis, and review how theories of belief revision need to be augmented to handle political debates.

Synopsis of Lakoff’s *Moral Politics*

In *Moral Politics: How liberals and conservatives think* Lakoff (2002) sought to explain “why certain stands on

issues go together... why the puzzles for liberals are not puzzles for conservatives and conversely; and ... topic choice, word choice, and forms of reasoning in conservative and liberal discourse” (p. 33). Lakoff explicates how liberals and conservatives analyze social issues in different ways: Do the poor need nurturing (education and health) to enable them to participate or are they manifesting inherent laziness and lack of discipline? Is the death penalty murder or a deserved punishment, promoting self-discipline?

In brief, the two political world views are based on two models of the family, Strict Father (conservative, Figure 1) and Nurturing Parent (liberal or progressive, Figure 2), presented here a schematic conceptual relations.

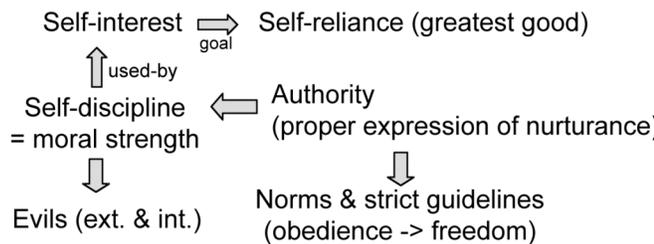


Figure 1: “Strict Father” conservative world view. Social utopia will be realized by each person realizing their potential for individual strength. Authority nurtures individuals by articulating and enforcing strict norms, in adhering to which individuals will develop self-discipline. Self-discipline enables promoting one’s self-interest, with the goal of developing self-reliance, which realizes the potential of the self, the greatest good. Self-discipline (moral strength) is inhibited by evils, external and internal, which are actions, actors, and influencing forces that do not adhere to the norms and strict guidelines laid down by authority.

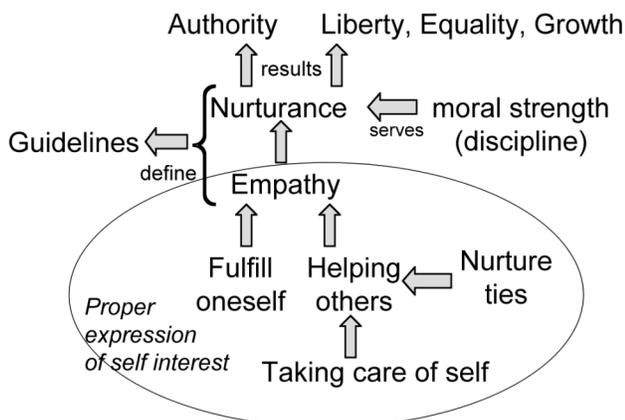


Figure 2: “Nurturing Parent” progressive world view. Social utopia will be realized from society realizing its potential strength, participating within larger orders. In this world view, the proper expression of self-interest is to help others (by nurturing ties and taking care of oneself) and to fulfill oneself so as to develop empathy for others. Empathy and more strength (discipline) enables properly nurturing others (which includes defining guidelines for them). Proper

nurturance will result in earning authority (as a natural, nurturing leader) and promote liberty, equality, and hence growth for others, which will realize the potential of the group.

As Lakoff stresses, “conservative” and “liberal” are radial categories, not definable by properties that all members of the group possess (p. 7-8). Roughly 60% of the American population is estimated to hold mixtures of these prototypical world views, or to apply them differently in different circumstances (e.g., home, work, local communities, and foreign policy). Nevertheless, I take as given that there are two opposing “camps”—suggesting two stable attractors for forming a political conceptual system—and friends, family, and government officials have had great difficulty understanding each other. This polarization of political discourse cries out for a cognitive explanation going beyond the articulation of the metaphorical and conceptual relations of the world views.

Further analysis reveals some striking patterns that Lakoff articulates:

1) *The models are built from the same conceptual elements (e.g., authority/rules, self-reliance, fairness, competition, moral strength), but formulate principles from them that give the concepts different meanings and priorities* (p. 35). For example, both world views stress the importance of freedom. But “When Bush is talking about freedom, he isn’t talking about ‘freedom to marry.’ Or ‘freedom for a woman to control her own body and reproduction.’ Or ‘freedom to unfurl a banner protesting the president’” (Lakoff, quoted by Garofoli, 2005).

2) *Beliefs about political issues are based on values grounded in different metaphors for the family, which I call foundational metaphors. Metaphors about the nature of life frame the entire discourse: life as struggle (conservative) vs. life as growth (liberal).*

3) *The world views and foundational metaphors are largely subconscious conceptual relations, as well as modes of reasoning and even ways of debating.*

4) *The moral principles produce radically different conclusions about social policies (e.g., abortion, social programs and taxes, regulation and the environment, affirmative action, crime and the death penalty).*

5) *Alternative world views appear to be incoherent (e.g., a liberal finds the conservative’s pro-death penalty and anti-abortion positions to be contradictory).*

5) *People reductively view opponents as being stupid or even evil,¹ because alternative policies appear to be inconsistent and hence unprincipled.*

These are very powerful, general observations, which go well beyond political substance to raise issues of broad cognitive and social importance. Lakoff of course stresses the nature of categories and metaphors, and emphasizes that the world views constitute *modes of reasoning* and not just

¹ Because conservatives hold that only one world view is possible, non-conservative policies are immoral. That is, alternative policies do not relate to the conservative view of the family, so they are not based on values at all, and hence are immoral.

collections of belief. I believe the content analysis can be taken further: At issue is the very nature of conceptual *systems*; something fundamental is being revealed about the intertwining of the social, psychological, and neural aspects of learning. Subsequent sections explore this idea.

The Society as Agent: Relating Policies to Principles and Metaphors

Lakoff observes that people make sense of their political views through a “common understanding of the nation as a family, with the government as parent” (p. 35). I develop this metaphor in a slightly different way, to emphasize society as being a rational agent: Society forms policies (laws and regulatory systems) by which the collective acts on individuals to enforce moral principles by which utopia will be attained. The relation of the individual to society is a central theme addressed by a theory of the social mind.

In particular, the conservative and liberal theories of the social mind frame policies for prodding and rewarding people in different ways: Getting them to realize their potential (Strict Father guidelines) vs. providing basic needs and then opportunities to learn and participate (Nurturing Parent). These views are supported by different causal social-psychological theories of human performance: By the liberal view, participation is predominately natural and universally possible (e.g., based on an inherent need to develop one’s identity by participating in group activities; Lave & Wenger, 1991). By the conservative view, participation requires strong shaping (e.g., because of in-born differences in capability and the temptation of external evil influences).

Despite having a grounding in values and metaphors, rather than facts, the theory of the social mind nevertheless adheres to a logical, causal structure:

Metaphors => Moral Principles => Social Policies

Put one way, violating a social policy (e.g., allowing same-sex marriage) violates moral principles (e.g., marriage is “sacred” and is defined by authority), that are intended to respect foundational metaphors (e.g., marriage embodies the nature of family created by God). Put the other way, metaphors imply moral principles (e.g., rewarding hard work) that within a framing of the *theory of the society as agent* and a *theory of the working of the individual mind* require policies (e.g., on taxation) that respect and promote the moral principles. For example, the belief that individuals may be lazy and will seek unearned rewards makes social welfare both immoral (for it is unfair to those who worked hard for their money) and illogical (it is against the interest of society to provide disincentives for hard work).

In summary, I am stressing that the foundational metaphors are developed as conceptual systems about the nature of society as an agent, supported by a theory of the individual. Although it should not be surprising that policies about education, crime, marriage, etc. should be based on a theory of human nature, political debates do not appear to articulate this level of the argument. Instead, the nature of what is good or bad, what needs to be rewarded or

facilitated are stressed, and the rest is said to be a matter of value and morality. Yet, we find that policies really address the nature of the human mind in society and how society should act rationally to develop a utopian collective.

In summary, the theory of the social mind is based on a causal conceptualization of human behavior in a social environment. Policies prevent bad conditions (e.g., don’t allow people to grow up without proper nurture) or attempt to shape behavior via fear (punishment) or strict control (people in jail can’t commit crimes). In the face of complex and perhaps contradictory issues of (for example) economics, individual freedom, ethnic differences, and religion, it is not surprising that social policies do not rest exclusively on scientific fact, but rather derive from fears, values, and stereotypes. But why has a dichotomy of theories of the social mind arisen? What accounts for the stability of two antagonistic theories? Why is it so difficult for individuals to understand or even listen to alternative points of view?

Does Political World View Have a Functional Cognitive Basis?

I hypothesize that a folk “theory of the social mind” constitutes a reasoning framework for handling the psychological uncertainty that is inherent in conceptualization of social life. Lakoff observes that the liberal world view, with its tolerance of different perspectives and more open, interpretable definitions, is more consistent with the nature of conceptual systems and that the conservative view, in insisting on well-defined conceptual boundaries, is inconsistent with cognitive science. However, we must still explain why the conservative view appears to be so satisfying and practical to millions of people.

The idea that everyday concepts are family resemblances of graded distinctions was philosophically explored by Wittgenstein (1953), demonstrated experimentally by Rosch and Mervis (1975), and articulated by Lakoff (1987; 2002, pp. 9-10) as relations of “radial categories” (central subcategory, typical case, ideal case, anti-ideal prototype, stereotype, salient exemplar, and essential prototype).

Lakoff (2002) emphasizes that the categories of political discourse (e.g., marriage, forms of harm, freedom) are radial categories. Furthermore, the conservative principle of moral strength, a metaphorical concept, conceptualizes moral action “by strict boundaries that clearly delineate paths of behavior” (p. 90). The metaphor of moral wholeness conceptualizes an ideal “unity of form,” such that an entity (e.g., a group) is stable by virtue of being homogeneous and thus “predictable in the way it functions” (based on the idea that “things made of radically different substances may not hold together,” p. 90). In short, conservative morality is tied to notions of rules, authority, discipline, and integrity that favor social homogeneity through “natural, strict, uniform, unchanging standards of behavior” (p. 90). Consequently, anti-ideal prototypes (e.g., feminists, gays, unwed mothers, “able-bodied people on welfare,” environmentalists, gun

control advocates) are “demons” because their behavior does not follow the conservative’s explicitly defined categories (p. 170-71).

Lakoff concludes that the conservative world view is “out of touch with the realities of the human mind” (p. 366) because it presumes that social categories and rules of behavior can be based on fixed, literal, unequivocal, general, precisely defined distinctions (p. 367)—“moral absolutism requires conceptual absolutism” (p. 369). Therefore, (in my terms) the conservative theory of the social mind is based on psychological theory of the individual mind that is invalid (e.g., for punishment to work, it must not be viewed as a reward by the person breaking rules, p. 369). Lakoff states that “none of Strict Father morality’s requirements for what the human mind must be are actually met by real human minds functioning in real discourses” (p. 376). Indeed, he says that the Strict Father model is incoherent (p. 373).

But this conclusion presents a paradox. For it is apparent that a vast subpopulation of Americans (at least) find the notions of well-defined categories, strict rule interpretation, the conduit metaphor of communication, and Skinnerian punishment-reward schemes to be understandable, useful, and practical. Thus, these apparently unscientific ways of thinking are indeed functional in real discourses. Even if in some theoretic respect, the idealized Conservative world view cannot endure (e.g., because it would lead to the destruction of the environment on which it depends), we must explain why the Conservative world view is so satisfying to so many people, and in particular what social-psychological and perhaps neural factors favor its development and sustained (even tenacious) nature.

To begin, consider the conservative view that “the meaning of a rule must be invariant from person to person and occasion to occasion” (p. 371). This could be sustained cognitively if external authority continuously reiterates the rule, justifies its truth in terms of the foundational metaphor, and enforces narrow interpretations (e.g., Bush’s anti-clemency policy as governor of Texas produced 152 executions; Prejean, 2005). Thus, the conservative social system sustains what appears to be a cognitively implausible psychological theory of meaning and rule following. Put another way, the conservative theory of mind (how society must work rationally) follows from its folk theory of categories, rules, and behavior. For example, for marriage to be enforced as a strictly defined category (“a sacred act between a man and a woman” is a common phrase), then society should articulate policies and enforce laws that prevent same-sex marriage (e.g., Bush proposed during the 2004 election to modify the US constitution accordingly).

Public discourse about social issues is providing individuals with well-defined categories, principles, policies, organizations, and actions that sustain the metaphor of moral wholeness. The authority of the Strict Father world view provides a solution to mental ambiguity, by drawing sharp conceptual boundaries about what is right and wrong, what is proper, who is in control, and how behavior will be

rewarded. Conservative schemes for naming and evaluating situations and behaviors present and reinforce a social world of definiteness that makes the individual’s conceptual system less blurred and less open to interpretation.

In summary, the conservative world view solves a problem for society about how the mind works. Where belief systems might be uncertain, incommensurate, and idiosyncratic (or fragmented among many ethnic-cultural variations), the conservative mode of reasoning holds that only one world view is correct, that the best organization is hierarchical and based on performance, that power and ability trumps everything, and that all difficult matters have solutions dictated by the highest authority, God.

The data presented by Lakoff of the existence, substance, and stability of the conservative world view suggests a broader view of the openness of conceptual systems—through external, social organizations and discourse, individual concepts may be more sharply defined. The open nature of radial categories may always be a logical possibility (as evidenced by the Nurturing Parent world view), but may be made tractable as a social-psychological reality by imposition of verbal definitions and laws on social categories. Concepts such as “mother” may still be radial categories in practice (e.g., conservatives admit that a widow can still be a mother), but the conservative mode of reasoning deliberately restricts usage of terms and interpretations in political discourse to cope with what would otherwise be arbitrarily open usage (e.g., allowing a lesbian to become a legal father). Liberal views restrict usage, too, but by principles of nurturance that accept (and even celebrate) circumstantial variability and “creative” solutions (e.g., same-sex marriage promotes adoption).

It is not too surprising that a social order relates to a psychological theory of individuals. But could there also be a neural influence as well? Could the existence of two stable populations of conceptual systems be related to a predisposition (or reinforcement) of inherent, opposing and complementary neural processes? Specifically, there could be an individual neural bias for *assimilation* (admitting differences as acceptable variations of a category) and another bias for *distinction* (forcing differences into alternative categories, such as “deviants”). People with these two learning strategies are commonly called joiners and splitters: “Protagonists in academic debates often characterize themselves as ‘natural splitters’ or ‘natural joiners’ according to whether they prefer to emphasize theoretical integration or to focus on conceptual distinctions” (Harris, 2002).

Ironically, by this framing, a world view is *conserved* by making many conceptual distinctions of variants and perversions, corresponding to “other” people and “wrong” behaviors. A progressive is biased to view differences not as separate or “not me,” but as acceptable, or at least workable variations within a common “rainbow” conception of humanity, one that broadens to admit variations of identity as being within a theme or having a common motivation.

I do not have the evidence to support this hypothesis further, but only seek here to stress that what appears to be an illogical, untenable political position may be revealing how social life biases conceptualization: The conservative view is a useful, practical mode of reasoning, preventing social disorder otherwise fostered by a blurred nature of social categories. Put another way, Lakoff's data provides clues about how higher-order cognition can bias the neural processes by which hierarchical conceptual systems develop (i.e., promoting splitting or joining).

It is too soon to know whether neural biases might be developed in social discourse or shaping which camps individuals choose to join. Nevertheless, much more can be said about the individual experience of resistance to conceptual change, the topic of the next section.

Revising Political Beliefs: Social-Psychological Inhibitors of Conceptual Change

I argue that theories of belief systems, concept learning, and causal reasoning must be refined to account for resistance to conceptual change, and indeed, the vehement emotional discord individuals may experience in political debates. Changing beliefs about diet, for example, is easier than engaging in a discussion about capital punishment, in which one's world view may be treated as immoral.

First, social argumentation involves reasoning about policies, not cases. Read, Snow, and Damon (2003) examine "everyday social judgments, such as whether a couple we know is likely to get married or whether someone is guilty of a crime" (p. 1). But at issue in social debates is who is allowed to get married and why crime occurs. On the other hand, policy debate does fit the overall form that "decisions are determined by the representation constructed rather than by the "raw evidence" (p. 5). That is, people are working with conceptualizations of social terms (e.g., abortion, harm, freedom), coherently related by a theory of the social mind.

Why a statement of fact is simply discredited because of priorities, rather than being viewed as an inconsistency, does not appear to be sufficiently considered in theories of belief revision. For example, a liberal might say that disallowing abortion harms the freedom of the mother; a conservative doesn't necessarily disagree with this, but simply views the harm to the infant as more important because of moral principles. These policies and principles are entrenched (cf. Gardenfors, 1988), and it is not clear what kind of "incontrovertible fact" (Hasson & Johnson-Laird, 2003) would provide a context that enables reorganization of the entire conceptual system.

Similarly, Walsh and Sloman (2004) appear to treat "credible information" as non-problematic: "When we discover credible information that contradicts our existing beliefs, then rationally we must revise our beliefs in order to restore consistency." For example, on being told that not educating the poor perpetuates poverty, a conservative might respond, "Yes, but it's worse that students graduating with diplomas can't read or write properly"—hence the American education law "No Child Left Behind" promotes

standardized testing, not standardized educational opportunity.

What makes a statement a contradiction, that is, information that must be resolved? The reasoning operation is not just logical comparison or derivation, but involves a *willingness to work through unsettling implications*: "Either discard the facts or give up the clear and comforting worldview that they contradicted" (Danner, 2005, p. 51).

A perhaps radical kind of satisficing is at work in political debates—dealing with claims by ignoring them if possible or by wholesale stereotyping of discourse (e.g., discussing abortion with another party is stressful and hopeless).

Accordingly, the failure of analogical argumentation in the study of Keane, M. T. and Bohan, A. (2004) might result from viewing analogies purely structurally ("they involve one-to-one mappings" p. 5), rather than considering the origin and implication of the analogy with respect to moral principles. Thus, an analogy might be "good" with respect to its abstract form, but difficult to evaluate with respect to a given theory of the social mind. For example, a liberal might not be convinced by the argument for invading Iraq based on an analogy with Saddam being like Hitler (because the liberal more fundamentally rejects the view of the US as an authority that disciplines another country, which is different from self defense).

Keane and Bohan's conclusion that facts and figures are more effective than analogies is strongly disputed by Lakoff: "As soon as progressives argue the details, conservatives come back and argue their own details, and nobody knows the difference. And as soon as you get into the technical details, the liberals lose. Because the other guys are arguing values" (Garofoli, 2005). To oppose arguments based on values, one must argue back with other values, an alternative theory of the social mind, grounded in its own principles and foundational metaphor. For example, in articulating environmental policy, one could frame issues in terms of health and security, not the loss of species (Butler, 2004). Furthermore, the choice of words is important; rather than "global warming," which might convey something pleasant, use a term like "climate collapse" (p. 65).

Conclusions

This paper has elaborated Lakoff's analysis in *Moral Politics* by viewing the combination of foundational metaphor, moral principles, and social policies as constituting a folk theory of the social mind, such that if society is rational, the greatest good will result for all. This in turn relies on a theory of the individual mind in society that at least tacitly claims how nature and nurture affect individual behavior and the mechanisms/influences by which society can and should shape individual behavior.

Rather than saying that the conservative view is scientifically incoherent, I suggest that it provides a social-cognitive strategy for handling the inherent openness of radial categories and the interpretation of rule statements. This strategy is cognitively functional for the individual by

providing a mode of reasoning (articulated and sustained by social authority and laws) that makes social categories ostensibly well-defined and laws apparently objectively interpretable. The same strategy is socially functional by providing apparent order through enforced norms that seek social homogenization, clarity, and predictability. The liberal world view, shown by Lakoff to be consistent with cognitive science theory, may also be viewed as functional, by justifying categorical ambiguity and flexible, empathetic law interpretation (e.g., for death penalty clemency; Prejean, 2005) as morally right and socially valuable.

I further argued that existing theories of belief revision need to be extended to explain how people engage in debates about values and why they would view a fact as something that must be incorporated in their understanding. That is, the very starting point of theories of argumentation and belief revision must be examined, especially if a social-cognitive analysis is to be of practical value for helping people understand each other and develop mutually acceptable social policies.

Might heuristics based on theories of conceptual systems facilitate social discourse? Are political belief systems amenable to change through crafted interaction? Wilden's (1987) analysis suggests that polarization into either-or dichotomies (e.g., authority vs. tolerance) may be resolved by a Both-And conceptualization (e.g., social progress lies in both externally enforced self-discipline and nurturance). What can we learn from related analyses of other countries' political systems, foundational metaphors, and modes of reasoning? Do we find only variants of the joiners and splitters? How does a society articulate and sustain a Both-And mode of reasoning?

Although the present analysis may require adjustment as Lakoff's analysis of American politics might be revised, the overall form of my argument, linking political debates to a theory of the social mind with mutual relations to social order and psychological experience, suggests a fundamental elaboration in how we view the relation of individual cognition and society. Whether this relation further reveals a strategic, environmental adaptation of how any human being's conceptualization can become neurally biased (favoring assimilation vs. disjuncture), or an individual, natural bias for one mode of learning over another (as a way of categorizing differences) remains to be seen. As a Both-And thinker, I expect a blend of the two processes are at work, both nature and nurture.

References

- Blanchette, I. & Dunbar, K. (2001). Analogy use in naturalistic settings: The influence of audience, emotion, and goals. *Memory & Cognition* 29(5), 730-735.
- Butler, K. (2004). Winning words. *Sierra*, July/August, 54-65.
- Danner, M. (2005). How Bush really won. *The New York Review*, LIII (1) 48-53, January 13.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Oxford: Row, Peterson.
- Gardenfors, P. (1988). *Knowledge in flux*. Cambridge, MA: MIT Press.
- Garner, W. R. (1974). *The processing of information and structure*. Potomac, MD: Erlbaum.
- Garofoli, J. (2005). Bush puts his own spin on 'freedom.' *San Francisco Chronicle*, Jan. 21, A15.
- Harman, G. (1986). *Change in view*. Cambridge, MA: MIT Press.
- Harris, T. (2002). Attachment-related psychodynamics: Another shake to the kaleidoscope. *Attachment & Human Development*, 4 (2) 201-6.
- Hasson, U. & Johnson-Laird, P. N. (2004). Why believability cannot explain belief revision. *Proceedings of the Annual Conference of the Cognitive Science Society*, CD-ROM.
- Heritage, J. (1984). *Garfinkel and ethnomethodology*. Cambridge, UK: Polity Press.
- Keane, M. T., & Bohan, A. (2004). Should politicians stop using analogies? Whether analogical arguments are better than their factual equivalents. *Proceedings of the Annual Conference of the Cognitive Science Society*, CD-ROM.
- Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago: University of Chicago Press.
- Lakoff, G. (2002). *Moral politics: How liberals and conservatives think (2nd Ed.)*. Chicago: University of Chicago Press.
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge.
- Legrenzi, P., Girotto, V., & Johnson-Laird, P. N. (2003). Models of consistency. *Psychological Science*, 14, 131-137.
- Mannheim, K. (1936). *Ideology and utopia*. New York: Harcourt, Brace & World, Inc.
- Prejean, Sister Helen. (2005). Death in Texas. *The New York Review*, LIII (1) 4-6, January 13.
- Read, S. J., Snow, C. J., & Simon, D. (2003). Constraint satisfaction processes in social reasoning. *Proceedings of the Annual Conference of the Cognitive Science Society*, CD-ROM.
- Rosch, E., & Mervis, C. B. (1975). Family resemblances: Studies in the internal structure of categories. *Cog Psych*, 7, 573-605.
- Simon, D. & Holyoak, K. J. (2002). Structural dynamics of cognition: From consistency theories to constraint satisfaction. *Personality and social psychology review*, 6, 283-294.
- Thagard, P. (1989). Explanatory coherence. *Behavioral and Brain Sciences*, 12, 435-502.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Walsh, C. R. & Sloman, S. A. (2004). Revising causal beliefs. *Proceedings of the Annual Conference of the Cognitive Science Society*, CD-ROM.
- Wilden, A. (1987). *The rules are no game: The strategy of communication*. London: Routledge & Kegan Paul.
- Wittgenstein, L. (1953). *Philosophical investigations*. New York: The Macmillan Company.