

ON THE APPLICATION OF SOCIAL COGNITION AND SOCIAL LOCATION TO CREATING  
CAUSAL EXPLANATORY STRUCTURES

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RUNNING HEAD: Cognition, Location, and Causal Structures

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## ABSTRACT

Research in the social cognition field of heuristics (perceptual shortcuts) holds considerable untapped potential to study culture wars. In this paper, I draw upon research about heuristics, paranormal beliefs, cognitive development, religion, and public attitudes toward science to discuss diverse approaches to creating and maintaining systems of causal explanations. Explanatory systems are critical in constructing philosophies of human nature, epistemologies, priorities for organizations that originate and promulgate culture, and establishing societal priorities in general. Research on attribution theory and heuristics may be especially useful to examine the types of evidence and styles of proof embedded in causal systems. Group differences in causal explanatory structures, in conjunction with group status locations, contribute to culture wars. I conclude with suggestions for possible truces while admitting that group differences can make cultural armistices difficult to attain.

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Early in my graduate school career when I was a student in the Detroit Area Study, Howard Schuman recalled for his methods students his attempts to survey ideal family size in Bangladesh. His initial question: "Suppose you had no children. How many would you like to have?" drew a nearly universal response of "as many as God wills." Finally, he rewrote the survey item as: "Suppose you had no children. If God wished to give you as many children as you wished, how many would you wish for?" and the survey moved forward (Schuman, 1967).

More recently, establishing why an Egypt Air jet crashed in October 1999 became entangled with interpreting the co-pilot's comments on the plane's "black box." To the consternation of Egyptian officials, American investigators decided that when the co-pilot said that he put his life in God's hands, he meant that he would suicidally crash the plane. Egyptian officials insisted instead that upon realizing the plane was about to crash, the co-pilot called out a final religious invocation (Lewis & Johnston, 2001).

Assessments of causal systems resurfaced as Americans watched Osama Bin Laden discuss the September 11, 2001 attacks on the Pentagon and the World Trade Center in an apparently home-made videotape (Poniewozik, 2001). The *Time* journalist was mystified as the *al Qaeda* described using dreams and portents as one basis to plan the attacks on the United States. In the English translation, visions and magical thinking interwove throughout the conversation to bolster convictions of divine sanction and invincibility.

When Schuman constructed the fertility survey questions, his initial, implicit assumption was that we can control conception. By failing to acknowledge causal attributions that ideal family size depends on divine intervention, the original item inadvertently obviated such a causal perspective as a legitimate answer. Differences in causal language meant that researchers were denied the data they wanted until they translated that question into the causal language respondents spoke. The Egypt Air crash probe slowed as Americans and Egyptians disputed the meaning of the co-pilot's final

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remarks. *Time* journalist Poniewozik argued that Americans will misunderstand the current Middle Eastern situation unless they comprehend the basics of *Al Qaeda* causal beliefs.

This paper examines the social and educational importance of systems of causal explanations. It describes how processes associated with social cognition and social location can contribute to creating and maintaining these systems. Causal explanations are central in many social institutions, particularly those, such as education or the humanities, which reproduce culture. Research on social cognition suggests that some types of causal explanations are more apt to correspond to everyday ways in which people process and evaluate information. Our location in class, race, and gender systems, and our religious or political ideologies affect our self-interest in learning and using particular explanatory structures. Finally, I explore some consequences of superimposing causal explanations from one group to a second, especially when groups differ in social status. While variations in causal *lingua franca* can impede intergroup cooperation or attempts to induce organizational change, stalemates can escalate when it appears that one group is trying to impose its visions of causal reality upon another.

### **THE IMPORTANCE OF CAUSE**

Causal structures are critical for any society: they define what is easy, possible, difficult, or unattainable as societies define social roles, allocate resources, or transfer culture. For example, changes in causal attributions about our physical and biological worlds contributed to government financing of space exploration and experiments in genetic engineering because these projects appeared *feasible*, although they smacked of science fiction only a few decades earlier. Changes in beliefs about the intellectual potential of physically or emotionally challenged children led to laws about classroom inclusion and "least restrictive environments." Causal explanations of sex or ethnic group differences have influenced government equal opportunity programs--or even generated suggestions to place particular groups on reservations (Herrnstein and Murray, 1994).

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Although their ostensible *raison d'être* is *explanation*, causal structures typically proceed to present constructed facts as objective truth, for example, in religion, science, or 'new age beliefs.' Related to 'culture wars' or 'the politics of cultural reproduction' (Goode, 2000; Hall and Hall, 1986; Hunter, 1991), differences across systems of causal beliefs articulate what is fact, what is merely opinion, what is magical thinking, what are the disjointed rambles of insanity, what is genius, and what is legitimate evidence. From using the divine right of kings to justify feudal strata, to citing *Genesis* to prove that the universe was created in six days, to scientific studies of sex differences, causal structures appeal to accounts that emanate from purportedly transcendent and truly objective authorities.

Explanatory causal structures not only define what is true or explain *why* phenomena occur, they also usually delineate what the acceptable methods are to *discover* truth. From divination to "rational discourse" to randomized experiments, causal explanatory structures provide details of the correct means to discovery and indicate which methods are inappropriate. A large part of professional education consists of long periods of studying sacred texts (from the *Bible* to Max Weber to the *Quran*) and learning appropriate methods of discovery.

On an interpersonal level, cultural differences on what is true and how to discover truth can create frustration. Participants communicate past one another, ignoring the bases to their arguments, when they may actually in part agree. At the societal level, we see confrontations in academia about the acceptability of different theoretical and empirical approaches (logical positivist? deconstructionist? reconstructionist? qualitative? quantitative?) and in on-going, often highly rancorous politics to control sources of cultural origination such as schools, libraries, media, the arts, professional associations, or religious organizations.

#### **EXAMPLES OF CAUSAL PERSPECTIVES: A BEGINNING TAXONOMY**

Here I present a few of the diverse causal perspectives found in late twentieth

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century Western society. Some are religious, some scientific, some paranormal. According to local, state, national and international surveys of mass publics, specialized publics, and children, all these perspectives are either endorsed by majorities, sizable population fractions, or, for some 'new age' explanatory systems, by small, but sophisticated, minorities (Eve and Harrold, 1986; Goode, 2000; Harrold and Eve, 1986; Losh, 2001a; Miller and Kimel, 1998; Rosengren, *et al.*, 2000). These perspectives wind their way into culture wars, and the methods used in them often reflect findings from heuristics research (addressed in a later section).

- ▶ God (the divine) did it, a fatalistic perspective that places outcomes beyond human control, except for human placation or service as a divine instrument.
- ▶ Nature works with "an unseen hand" (Wiccans subscribe to this one ). Evans (2000) describes children's early causal cognitions about spontaneous generation.
- ▶ Astrological systems (deterministic and paranormal) are the most popular forms of 'adult magic' (Rosengren, *et al.*, 2000).
- ▶ There are "rational laws" to be discovered (and people can discover them).
- ▶ Causal relations are an illusion; the universe is chaotic and characterized by entropy. The variety in sets of explanatory structures is matched by diverse means of 'proof:'
- ▶ Randomized experiments or other systematic empirical methods, which vary alleged causal factors and control alternative causes. Testable theoretical propositions can be *falsified* and findings independently replicated. These are part of what many call (e.g., Kuhn, 1962) "normal science."
- ▶ Citing recognized authorities, whether scripture, famous scientists, Nostradamus, or philosophers.
- ▶ Marshaling a preponderance of arguments 'agreed' to be reasonable, as in a court of law or in journalism.
- ▶ Precedent, a major strategy in courts of law.

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- ▶ Intuition, feelings, inferences, or 'leaps of faith.' All are cited in 'born again' religious experiences but also by those who reject science because they view it as mechanistic, purposeless, and unfeeling.
- ▶ Proof by anecdote or carefully selected examples, often used in astrology and other magical systems, but also in religious, and even 'scientific,' treatises.
- ▶ Divine revelation disclosed by dreams, visions, portents, and coincidences.
- ▶ Agenda proof, in which a position is first established and evidence is then selectively marshaled in its support. Agenda proof and 'scholarship' emphasize *proof*, not disproof, an approach often found in law, debates, and advocacy journalism.

These beliefs about causal processes and the acceptable means of discovery are far from randomly distributed in populations. Further, researchers in cognition have come to believe that certain modes of explanation are intuitively more appealing than others.

### RESEARCH ON SOCIAL COGNITION

Students of culture have long rejected 'truth' as simply a set of relationships among 'objective facts'. Culture, including the perception and explanation of truth, is socially constructed, reflecting the values and self-interest of those who create it (Berger and Luckmann, 1966; Foucault, 1970). For example, we usually accept that the form, the content, and the precoded response categories in survey research questions can frame the answers. Incidents in which respondents, such as the Bangladesh Schuman studied, are sufficiently motivated to explain *en masse* that they cannot answer the items as worded are rarely reported, let alone investigated. We accept that television selects and edits the news that it airs, or that church services or other religious ceremonies are produced (Balmer, 1989; Wuthnow, 1994).

We also acknowledge that the human condition inherently blemishes routes to knowledge. Physical differences (e.g., eyesight or hearing), social self-interest, language, religion and religiosity, geographic location, social networks, and many other factors

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virtually guarantee diverse and imperfect systems of constructing causal explanations about 'reality.' What is conceptually useful is describing the *mechanisms* through which people create and maintain causal systems. I believe that one fruitful approach is to combine what we know about social cognition with how status and power influence creating, accepting, and challenging explanatory structures.

A sizable half century of research literature in social cognition has generated many findings that apply to constructing and maintaining sets of causal explanations, and also to the miscommunications that develop across them (for some integrative summaries see Fiske and Taylor, 1991; Gilovich, 1991; Plous, 1993; Rosengren, *et al.*, 2000; Zerubavel, 1991; 1998). This research perspective suggests that common modes of perception are more consistent with some types of causal explanatory structures than with others. For example, colorful, dramatic, or familiar events are more often remembered or "available" to use as evidence (as in a courtroom). We may take knowledge, skills, and methods of imputation from one situation and apply these inappropriately to another causal system (e.g., as when the student who is a talented debater applies these methods to science).

Heider's (1958) work on perception and attribution formed the genesis for much of this work. One of his principal assumptions was that we are all 'naive scientists,' attempting to explain environmental events and regularities. His work heavily influenced the flourishing study of heuristics (perceptual cognitive shortcuts or "rules of thumb"). For example, ethnic, gender, occupational, or religious stereotypes reflect tendencies to categorize information, typically using superficial and representational clues. Alternatively, the self-interest ('hedonic relevance') an individual has in the outcome of an encounter can affect perception (for some classic examples: Kahneman, *et al.*, 1982 or Nisbett and Ross, 1980).

A heuristics and attributional approach applies to more than just individualized instances of perception; it influences philosophies of human nature, epistemologies, and explanatory structures. For example, the causal inference that people--or a stratum of



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persons-- control their destinies (as opposed to, say, being pummeled by environmental forces or shaped by divine will) emphasizes particular causal explanations above others in addressing why certain individuals or social groups become educational successes, garner riches, commit crimes, or go to war. By explaining why social events occur, *at the least* explanatory structures implicitly connote the moral tenor of behavior. If people are characterized by freewill, the onus for our crimes or failures rests on our shoulders. If our fates reflect godly predestination, our achievements demonstrate divine intervention as much as they do our accomplishments.

Causal attributions have direct ramifications for educational systems. Emphasizing motivation or effort means that the immediate perception of failing students may be that they didn't try hard enough. Applying a psychiatric or pharmaceutical approach to certain students encourages in-school medication. A shift to self-efficacy explanations may change lesson plans to facilitate student successes.

Perhaps the most direct application of heuristics to explanatory systems addresses acceptable methods of proof. Recent work suggests an important refinement to Heider's early assumptions: we are not just 'naive scientists,' we are also 'agenda scholars.' 'Agenda thinking,' in which perceivers affirm the consequent by selectively marshaling evidence consistent with their original conclusions, can lead to applying stereotyped labels to juveniles or to perceiving attractive individuals as intelligent. It can predispose people to accept pseudoscientific systems of proof such as astrology, 'proof by authority citation' (e.g., Biblical scripture), or leaps of faith which operate using similar cognitive principles. And, it can influence teaching science as a body of fact rather than as a process of discovery (e.g., Gilovich and Savitsky, 1996; Gilovich, *et al.*, 1985; Glick and Snyder, 1986; Goode, 2000; Langer, 1975; Schmidt, *et al.*, 1997; Tversky and Kahneman. 1971).

Explanatory systems that locate the situs of personal activity outside the individual or the divine (e.g., environmental determinism or Darwinian evolution) are often more

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difficult for Westerners to grasp because Western perceivers tend to place individual disposition or intention at the center of the actor-environmental stage, overlooking clues from the scenery. 'Modern scientific thinking,' in which scientists play devil's advocate by *disproving* hypotheses may be particularly difficult and 'unnatural' for people to comprehend. The apparent reverse logic in processes of science frustrates individuals who lack experience evaluating alternative theories and supportive evidence. It makes scientific thinking seem tenuous and uncertain compared with other proof systems such as agenda scholarship (Singer and Endreny, 1993; Stempien and Coleman, 1985). Preachers appear certain of what they say, while scientists, following the 'scientific method' appear unsure. Partly as a result, many people misinterpret 'scientific results' or misappropriate such information for personal or social causes (e.g., Miller and Kimel, 1998; Schmidt, *et al.*, 1997).

### **EXCLUSIVE VERSUS COEXISTING SYSTEMS OF CAUSAL EXPLANATIONS**

In any given society, a particular group or institution may control preeminent systems of causal explanatory structures. Usually it is those at the top of the hierarchy who try to impose a singular, and *exclusive*, explanatory system on everyone else. Examples include explanations generated by one religious group or political party dominating society (e.g., the Puritan United States, some current middle Eastern countries, Bolshevik Russia).

More frequently, particularly in societies with relatively permeable boundaries, or in those which allow religious, intellectual or other cultural pluralism, several explanatory structures can *coexist*, accompanied by a range of methods to use to determine what is true. Although members of such societies may not articulate the principles underlying coexisting explanatory systems very well, many can *roughly* distinguish among the diverse sets of causal explanations in their culture. Many scholars (e.g., Goode, 2002; Rosengren, *et al.*, 2000) suggest that coexistence can be automatic, easy, and accepted. A Fundamentalist Christian may do research in physics or read her horoscope daily (or both).

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Cognitive compartmentalization helps to maintain peaceful coexistence. Sets of causal beliefs and methods of discovery are often institution-specific, so a legitimate means of discovery in one institution (e.g., praying for enlightenment in church) categorically may be deemed inappropriate in another (e.g., praying for the solution to a chemistry problem). Causal systems may even be deliberately segregated by institution. The social scientist who states that science cannot set values or tell a society what is 'good,' or the religious leader who leaves medicine to physicians and pharmacists practices this type of intentional institutional segregation. What has made "creation science" distinctive in American society is its attempts to appropriate science methods and findings to support religious causes (e.g., Evans, 2000).

Coexistence may also occur because people "gloss over" the differences implicit among different causal systems, methods of proof, and the socio-cognitive processes that lay behind them. Using *very* rough distinctions enables the general public to tolerate teaching both evolution and Biblical creation in science classes by defining both generically as theories. Differences in methods of proof and the rigors of evidence among these two systems are obscured. Even trained scientists may fail to distinguish between normal science which follows the "scientific method" and 'agenda science' which uses very different conventions.

Perceivers can also create coexistence among competing sets of causal explanations by interpreting findings or beliefs in one explanatory structure so that they appear superficially compatible with those of other systems. For example, interpretive or mainline American Judeo-Christian religions use "theistic evolution" to reconcile the Bible with modern science by treating each 'day' in *Genesis* as though it encompassed thousands or millions of years thus creating 'divine evolution,' whereas fundamentalist Christians and Jews may insist upon a literal 24 hour day. And both mainliners and fundamentalists often retain the notion of an 'intelligent designer,' as opposed to random mutations and selective

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fertility.

However, attempts at cognitive segmentation may fail. Organizations often overlap in the everyday social world, and their conflicting, ambivalent, or internally contradictory offerings of facts, methods, or explanations (e.g., *Biblical* Creation versus the “Big Bang”) thus can be immediately perceived and their contradictions exposed. Positions of influence related to the creation and maintenance of culture, such as school board seats, may be so limited that people who hold conflicting sets of explanatory structures in these positions inevitably compete for them and directly confront one another.

Strains in compartmentalization or segmentation can become progressively pervasive as new means of knowing or causation compete with and possibly supercede earlier explanations. In science, for example, Kuhn (1962) labeled these as paradigmatic succession (although he was not always clear how scientists knew to switch from an old paradigm to a new one.) But supercedence has broader cultural ramifications than shifts from one scientific paradigm to the next. For example, as science or technology explains conundrums that were once the provenance of philosophy, religion, or astrology (e.g., mental illness or space travel), established institutions may entrench themselves and reject these alternative explanations. Alternatively, they may scurry to develop new areas where their explanatory systems enjoy renewed preeminence (e.g., describing the meaning of life, proposing a hierarchy of values, or designating compatible mates), ceding previous explanatory territory to newer, more publically convincing methods of proof and discovery in those arenas.

### **SOCIAL LOCATION AND STRUCTURES OF CAUSAL EXPLANATIONS**

Establishing causal structures can create rancor, even within a single institution. For example, a scientist who subscribes to a logical positivist approach (as most do most of the time) probably accepts results from controlled experiments as a legitimate way to know, yet may vigorously debate the *interpretation* of findings. Virtually all religions postulate a

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superhuman force yet often disagree on *how to discern* the form(s) of that force. At least some dissent stems from the intersection of social location with different causal explanations.

Causal explanatory structures often coincide with stratification and power differences. Knowledge workers (including religious leaders) in more powerful strata typically generate explanatory structures that they define as universal, but these same causal structures may be interpreted by less powerful strata as impositions. For one thing, many causal explanations reify the position of more powerful social segments. Knowledge itself is a scarce good and its access may be opened only to elite social groups. African-American slaves were barred from literacy and the Afghanistan Taliban closed education to women. Some religions insist that truth can only be divinely revealed to those with a 'born-again' experience. Educational or religious institutions are a major way not only for members of a society to learn explanatory structures, but also to modify them or create new ones.

As Evans (2000) notes, low perceived control over seemingly unpredictable events or circumstances can make explanatory systems that emphasize superhuman power and design, such as creationism, attractive. Extending her arguments about the appeals of *Biblical* creation further, causal systems that originate in mysticism or divinity emphasize the *universal helplessness of humanity* in the face of preternatural forces that transcend powerful individuals or strata. In such explanatory systems, even very wealthy and/or high status individuals must bow to supernatural powers.

Explanatory systems that emphasize individual determinism more often originate and dominate among higher status groups whose members tend to perceive the world as more controllable and less risky. In the research literature on self-efficacy and related concepts, higher levels consistently occur among well educated European and American White men (e.g., Bandura, 1982; Barke, *et al.*, 1997; Gandy, *et al.*, 1997; Slovic, 1996.) American research indicates that women, or comparatively poorly educated individuals, more often

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endorse creationism rather than evolution, and more often say that mystical systems such as astrology have scientific merit (Losh, 2001a).

Not only do *internalized* perceptions of causal control differ across strata; higher status individuals often attribute the achievement that occurs among lower status groups (e.g., women) to unstable factors such as effort or luck, rather than to the more stable and internal causal construct of ability. Wealthier and better educated Mainline religious adherents in most cultures more often stress individual determinism and 'scientific methods' while orthodox and fundamentalist religions more often stress obedience to authority, hierarchical social relations, fatalism, and reliance on 'higher powers'.

In lower status groups, truth tends to be passively *revealed*, rather than *discovered* or 'created.' Acquiring science or technology knowledge is less likely to be viewed as a useful route to self-improvement or group status mobility. By contrast, in higher status strata, 'truth' is actively sought in schools, libraries, the Internet and other cultural outlets, and its acquisition seen as the path to a healthier, happier, more 'in control' society. For example, computer literacy and Internet fluency appeared in better educated—and wealthier—families several years before their occurrences in less educated or poorer families (Balmer, 1989; Darnell and Sherkat, 1997; Kosmin and Lachman, 1993; Losh, 2001b; Owen *et al.*, 1991; Pargament, 1988; Peshkin, 1986; Wald, *et al.*, 1989).

### **SOCIAL LOCATION, CAUSAL EXPLANATIONS, AND CULTURE WARS**

A particular causal explanatory system may become preeminent, designated 'the best,' the most fruitful, or simply the most prestigious way to explain what is true. Western positivist science has vied for this position for the past two centuries. We believe that its products generate a wealthier and happier society (e.g., vaccinations, storm warning systems, even entertainment forms such as television.) To label a cultural product 'scientific' conveys a legitimizing stamp of approval.

However, if no longer as preeminent in many societies, religion is still very important

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(e.g., Evans, 2000), especially in defining *moral* explanations and values. While astrology holds no *official* place in modern American causal systems, millions still follow their daily horoscopes (Losh, 2001a). For example, in a well-publicized episode during the 1980s, presidential wife Nancy Reagan consulted astrologers about policy issues.

By controlling communication channels, high status groups can select among methods of knowing, acquire those most consistent with their social standing, and define for others what the preeminent causal explanatory systems should be. Once defined, higher status members flock to acquire expertise. In modern America, upper middle class parents ensure that their children (especially boys) have computers, enter science fairs, receive tutoring in math, or acquire whatever trappings or skills show that they are initiates in the highest circles of knowledge.

Political battles over cultural reproduction, such as school board composition, reflect which groups believe they have the right to define truth, which evidence is permissible, and how truth shall be taught. Fundamentalist groups often complain that current public school curricula reflect an unarticulated 'secular humanism'--a set of concepts defined more by the religiously orthodox than by any self-defined sect of 'secular humanists.'

'Secular humanism' purportedly places humans at the center of causal systems, uses data rather than faith as evidence, and promotes relativism rather than absolute rules for evaluating information, human behavior, and thought. Some Fundamentalist groups assert that public school Halloween celebrations or *Harry Potter* 'wizard' novels in the school library demonstrate how public schools indoctrinate children in magical explanatory systems. In contrast, fundamentalist Christian schools teach pupils that God is the prime mover, a causal system that makes *Biblical* creation consistent with other teachings in that scholastic system (Balmer, 1989; Evans, 2000; Peshkin, 1986).

From a different perspective, many Marxists maintain that scientists and other 'experts' create causal explanatory structures that benefit elites. Perennial fads in Social

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Darwinism are cited to demonstrate how elites construct self-serving causal explanations. Radical feminists assert that knowledge is constructed and accentuated to maintain patriarchy, e.g., that biological and psychological data are slanted to demonstrate male superiority. Various peoples of color note that causal explanatory systems rationalize the inevitability of internal and external colonial domination. All these groups have posed challenges to mainstream causal explanatory systems. And, consistently, Whites and men do claim greater confidence in science (references in this section include Barke, *et al.*, 1997; Fox and Firebaugh, 1992; Gandy, *et al.*, 1997; Goode, 2000; Miller and Kimel, 1998; Slovic, 1996).

What often neither those claiming that causal explanatory systems benefit elites, nor those who see themselves fighting rear-guard actions against radical culture insurgency, acknowledge is that typically it is the causal systems and methods of proof that clash more than 'matters of fact.' Frequently the 'objective methods of scholarship' are, instead, advocacy journalism, agenda proof, or authoritative citations. Differences in the bases for proof and discovery are not even examined and discussed in these culture wars.

No wonder disputes occur given the murky motivations surrounding the establishment and perpetuation of causal systems. One type of battle revolves around misapprehensions. Cultural contenders are unaware that they are mixing metaphors, applying the 'right' causal system to the 'wrong' institution, and speaking entirely different causal languages. In other cases, the logic of a particular causal system (e.g., science or law) is not being followed or is misapplied to a different causal system.

But more difficult to address than the battles created by different causal languages are those that originate in social location, particularly in status differences. Battles that arise through the fusion of social location with specific causal structures can be especially bloodthirsty. When social location enters the picture, disputes over terminology or applications smack of hedonic relevance. For example, claims that 'science is objective' or



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'value neutral' may fall on deaf feminist or ethnic minority ears *because* science has been used by elites, at least some of the time, to support stratification systems through 'scientific proof.' Emphasizing the relative physical size of male and female brains, or contrasting the skull shapes of European with African Americans illustrate some "applications of science" used barely a century ago.

Even without self-interest complications, it is difficult to resolve conflicts that develop from very different ideological causal positions about humanity. Someone who sees people as ridden by sin, subjectivity, or controlled by larger forces, will have trouble communicating with someone else who sees humanity as 'infinitely perfectible'. Even with a translator present, resolution may not be possible.

### **CAUSAL EXPLANATIONS AND AN ARMISTICE IN CULTURE WARS?**

Differences in social location and in ideology generate the self interest that can make causal frictions intractable. If one group sees the 'solution' as a unilateral imposition of their causal reality (e.g., evolution) upon others, and if different causal systems coincide with group differences in stratification (the evolution versus creationism debate), compromise will be tough. Concessions on causal explanations may have to occur through bargaining or third party intervention. For example, many textbook companies intervene between American cultural conservatives and liberals by providing one set of school materials targeted toward the South or Midwest (the "Texas version") and a second for the East or West coasts (the "California" version, Holden, 1987).

If self-interest can be controlled, an examination of differences in how conflicting groups 'define truth,' especially any distinctive styles of establishing causality, may provide a basis for communication and possible compromise. Differences in causal systems must be clearly explicated to see if common ground is possible. Name-calling or creating scapegoats ('they' are taking over our school boards) only accents polarities. The foundations that each group uses to establish 'truth' and what kinds of evidence they use to legitimately support

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assertions should be carefully defined and discussed. Methods of proof that are considered legitimate to use in one causal system (e.g., divine revelation) should be carefully considered before applying them to other causal systems.

Following initial discussion, dissenting groups can then consider the validity of opposing views. For example, the segregation or compartmentalization of different forms of causal explanations and evidence may provide an arena for compromise (agenda based research and advocacy is the legitimate way attorneys prove—and win—a case, but is usually deemed inappropriate in academic settings). Warring sides may also agree that a valid method was misapplied in specific instances. For example, at least some research on “male superiority” used flawed methods; thus scientists could exclude a particular study while leaving the ‘processes of science’ more or less intact (this is more difficult to do when the challenges address the methods of discovery themselves).

Compromises in social cognition may not suffice to overcome group differences in social location. Resources and self-interest may perpetuate culture wars. For example, at least some current foment about who wins local school board elections emanates from wealthier religious liberals and moderates, who paid scant attention to these local electoral contests until ‘their side lost.’ Some scholars who accept secular Western European, male-dominated explanatory structures label scholars who do not as upstarts ‘challenging civilization’ (feminists, Afrocentric scholars) or recidivists who want to return contemporary thought back to the ‘Dark Ages’ (Fundamentalist Christians or Muslims).

Cultural landscapes are not static. New educational methods are implemented, new ‘scientific truths’ supercede the old, and dissident players and mobile groups challenge cultural assumptions and institutions. In a world now marked by international mass communication, representatives from different countries interact who are woefully ignorant of each other’s cultures. Knowledge of how cognitive style and group social location influence what people say is true, loci of causality, and the methods defined as legitimate to

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use to establish what is real, should prove increasingly useful in attempts to resolve on-going, and increasingly global, cultural skirmishes.

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