

A Cognitive Scientist Looks at *Daubert*

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Our system of justice requires that trials be maximally fair. It is part of what holds this society together. Indeed, it is part of the genius of the justice system to have a kind of balance between strict and nurturant morality within the judicial system, so that the system itself provides a kind of moral and political balance.

Daubert v Merrell Dow Pharmaceuticals, Inc (1993) has upset that balance and has made our judicial system significantly less fair and more politically conservative. *Daubert* is not just about the application of some procedural rule (Rule 702). *Daubert* functions in its application as a strategic initiative that significantly moves America in a conservative direction, in the moral and political spheres, as well as in the legal sphere. (*Am J Public Health*. 2005;95:S114–S120. doi:10.2105/AJPH.2004.044552)

Daubert v Merrell Dow Pharmaceuticals, Inc (1993) is a procedural move that, on the surface of it, appears not to change much. Judges had always had the authority to decide on the admissibility of evidence and the relevance of an argument. However, *Daubert* requires district judges in federal courts, on a challenge by either party, to hold a hearing ruling on the expertise of expert witnesses, with the judge determining the validity of any science used and the causal relevance of the expert testimony. The judge can exclude any expert testimony that does not pass the *Daubert* test of being “good science” and “relevant science,” that is, exclude it at a *Daubert* hearing before it reaches the ears of the jury. And the judge can issue a summary judgment and dismiss the case if he or she finds expert testimony insufficient. *Daubert* has become an issue in important civil cases, for example, in product liability and toxic tort cases, where expert testimony is crucial.

General Electric Co v Joiner (1997) raised the bar for appeal so high that it made it virtually impossible to appeal a *Daubert* decision. *Kumho Tire Co v Carmichael* (1999) generalized *Daubert* to all kinds of experts, not just scientists. *Daubert*, *Joiner*, and *Kumho* may look like simple procedural extensions of the powers judges already had. Moreover, *Daubert* can, in certain cases, function positively to keep clearly insubstantial cases from clogging the courts.

But *Daubert* has taken on a very different life of its own. *Daubert* has come to be em-

ployed as what I call a “strategic initiative,” that is, a single move—apparently a mere procedural move—that has multiple, powerful effects and changes society in a way that no series of legislative moves could.

COGNITIVE ANALYSIS

The methods of cognitive analysis that I will be using come from cognitive linguistics. They are the following: frame semantics, prototype theory, and metaphor theory.¹ These are methods of rigorously studying common sense, that is, our common understanding of the world, which is largely unconscious and automatic because it is physically realized in the neural circuitry of our brains in such a deep way that it takes training to even notice what is going on.²

Frames

A *frame* is cognitive structure, one that is necessary for understanding and reasoning. It contains participants, often called *semantic roles*, and may contain event sequences, called *scenarios*. For example, a Trial Frame structures our common understanding of a trial, in this case, a civil trial. It has participants playing such roles as Judge, Plaintiff/Prosecutor, Defendant, Witnesses, Attorneys, and Jury members. Our common sense Trial Frame has a *scenario* that includes a statement of Claims against the Defendant, an Answer by the Defendant, the Testimony of Witnesses before the Jury (with cross-examination), a Summation by

Attorneys, a Deliberation by the Jury, a Verdict (Liable or Not Liable) by the Jury, and a Penalty if the Verdict is one of Liable.

Prototypes

The very concept of a trial is structured by such a frame. Our normal understanding of trials involves various kinds of prototypical versions of this frame. First, there are certain default prototypes, where if nothing else is said, certain values of the *semantic roles* and *scenarios* are assumed. For example, in criminal trials, the default Plaintiff role is taken by a governmental agency, say, a state or the U.S. government. Next, there are Ideal Prototypes. For example, a fair trial is an ideal trial—one where there is no prejudice by judge or jury, where the attorneys are maximally competent, and so on. There are Nightmare Prototypes—the trial from hell—an unfair trial where the judge and jury are prejudiced against someone who is powerless and cannot afford adequate representation. And so on. Thus, the very concept of a trial contains a general default frame, and various kinds of prototypes.

Conceptual Metaphor

Conceptual metaphor is the use of one kind of frame to structure an understanding of another kind of experience or enterprise. Conceptual metaphor is centrally about inference, allowing inference from the “source domain” to be applied to the “target domain.” Metaphorical thought is normal, occurs at the conceptual level, and may be not merely imaginative but even definitional.³

Metaphorical thought is necessary, not just nice. Metaphorical thought arises spontaneously around the world, and a lot of it is universal. Around the world, it is common to think (not just talk) of anger in terms of heat (e.g., “boiling mad,” “letting off steam”), quantity in terms of verticality (e.g., “prices rose,” “employment fell”), achieving purposes as reaching destinations (e.g., “nothing in my way,” “almost there,” “see the light at the end of the tunnel”), and so on for hundreds of other cases.

Abstract thought requires metaphor; almost all abstract thought is metaphorically based on concrete, sensory-motor concepts. This is even true of mathematics.⁴ An important example is causation. Causation has many forms, depending on the metaphor used. A very common metaphor for causation is forced motion, as with verbs like push, pull, bring, send, and so on, as in sentences such as “They pushed him into running for office”; “I pulled him out of his depression.” Causation can also be conceptualized metaphorically in terms of links (e.g., “Cancer has been linked to smoking”), giving and taking (e.g., “The noise gave me a headache. The aspirin took it away.”), sources (e.g., “He died from pneumonia”; “What is the source of big city crime?”; “Where do our problems come from?”). Each metaphorical form of causation comes with a different mode of reasoning, depending on the metaphor. The range of causal reasoning arises from the range of causation metaphors. The range of causation metaphors and their distinct modes of causal inference arise from human experience moving in the world. Hart and Honoré noticed that applying force in everyday movements is the basis of causation:

Human beings have learnt, by making appropriate movements of their bodies, to bring about desired alterations in objects, animate or inanimate, in their environment, and to express these simple achievements by transitive verbs like push, pull, bend, twist, break, injure. The process involved here consists of an initial immediate bodily manipulation of the thing affected and often takes little time.⁵

What Hart and Honoré did not notice was the metaphorical nature of our causal concepts and the range of causal inferences arising from these metaphors. They, of course, were writing before the age of cognitive science.⁶

How we think matters to how we live our lives. The metaphors we think in terms of are the metaphors we live in terms of. A marriage, for example, can be understood metaphorically in many ways: as a partnership, as a journey through life together to reach common life goals, as a union of two individuals forming a third entity, as a container that the spouses are in, as a means for growth, as a haven from the outside world, as a form of salvation, as a institution that the spouses become a part of, and so on. How

one thinks about a marriage depends on the metaphors used. If you think of a marriage as a partnership, then things go wrong when there is not an equal sharing of work and benefits. If you think of a marriage as a means for growth, then things go wrong when at least one spouse is not “growing.” If a marriage is lived by certain of these metaphors, then the metaphors may become true of the marriage. Trials, as we shall see, are structured by various metaphors.

Trial Metaphors

All trials are based on a fundamental metaphor for morality, called *Moral Accounting*, in which *Well-Being is conceptualized in terms of Wealth*. Thus, an increase (or decrease) of well-being is conceptualized as an increase (or decrease) of wealth. So if I do something to help you (increase your well-being), you might say, “I’m in your *debt*”; “I *owe* you one”; “How can I ever *repay* you?” “*Returning the favor*” is balancing the moral books. If I do something to harm you (decrease your well-being), I have metaphorically decreased your wealth (as if I had taken money from you). The moral books can be balanced by *restitution* (doing something good to balance the harm), or by *retribution* (harming the person who harmed you).

Legal proceedings are typically legal versions of Moral Accounting. In criminal law, the person who does harm is punished (*retribution*) or, in some cases, made to perform community service (*restitution*). In tort law, the harm done to the plaintiff by the defendant may be physical, psychological, or financial, and the verdict is a monetary payment that is seen both as financial punishment to the defendant (*retribution*) and *restitution* to the plaintiff.

Moral Accounting may be a metaphor, but there is nothing fanciful about it. It is central to the very meaning of, and rationale for, a legal trial.

A second metaphor central to the very meaning of a Trial is the Trial As Contest metaphor. In a Contest Frame, there are Contestants, a Contest Event (conceptualized as a battle), paid Combatants (Mercenaries) who represent (do battle for) the Contestants, an Outcome in which one Contestant becomes the Winner and the other the Loser, and a Stake (what the winner gets or the loser loses,

or both). The Trial as Contest metaphor structures a trial in the following way: the Plaintiff and Defendant are the Contestants, the Contest Event is the presentation of the case to the jury, the Combatants are the Attorneys, Persuading the jury is Winning, the Jury’s Verdict is the disposition of the Stake, and the Judge is the Referee, whose job is to guarantee a fair contest.

A third metaphor central to the very concept of a Trial is the metaphor of the Judge as Strict Father. In a strict father family, the father is the moral authority who knows right from wrong, commands respect and obedience from his children, requires that they speak only when spoken to, and punishes them when they violate these conditions. In the trial, the Judge is the Strict Father, his Legal Authority to conduct the trial is the Strict Father’s Moral Authority, and Legal Knowledge about court procedure is Knowing Right from Wrong. The Judge commands respect (you call him “Your Honor,” you dress well when you come before him, you stand when he enters the room, and you obey his edicts; if you don’t, it is “contempt” of court), and he can punish you if you don’t show proper respect.

Thus, a Trial is conceptualized using the Trial Frame and three metaphors: Moral Accounting, the Trial as Contest, and the Judge as Strict Father. This is referred to in cognitive linguistics as a conceptual blend, a single integrated structure in which the Trial Frame and the three metaphors are an integrated whole.

It is important to distinguish our understanding of the trial in itself, which we have just described, from one’s understanding of the social role of a trial. For the sake of the present discussion, we consider toxic tort trials, since they are perhaps the most important of the *Daubert* cases. There are two major perspectives on toxic tort trials: that of the public interest and that of corporate interests. These tend to correspond to liberal and conservative political interests, for reasons to be discussed below.

The Public Interest Frame

The Public Interest Frame presupposes certain background knowledge. Some corporations and individuals shirk their responsibilities to the public in one of two ways, usually for the sake of profit. First, they make products or perform services that they know have

a reasonable chance of harming people. Second, they may be negligent in protecting the public from the harmful effects of their products or services. Tort law is, from this perspective, the last line of defense for the public and the only source of justice for those harmed.

In the Public Interest Frame, the toxic tort trial is framed as a Heroic Battle, with the following participants: a powerless Victim (the Plaintiff or Plaintiffs) who has been harmed, a powerless Potential Victim (the Public), a powerful Villain (the Defendant, typically a corporation), a Villainous Act (that Harms the Victim), Potential Future Villainous Acts of the same kind, a Hero (the Plaintiff's Attorney), the Hero's Troops (the expert witnesses for the Plaintiff), and a Punishment inflicted by the Hero. The punishment invokes the Moral Accounting metaphor. The Villain is made to pay to compensate the Victim for the harm done. There is an additional punishment as well ("punitive" damages). The Villain pays the Victim additional money as a deterrent against Potential Future Villainous Acts. The rationale for this is that the Victim is also a Hero for bringing the suit that protects the public against potential future harm and so deserves moral credit in the form of a payment for taking the trouble. The Plaintiff's Attorney deserves moral credit both for bringing justice to the Victim and for protecting the Public and so has earned his fee, especially since he has undertaken the case at considerable financial risk. A loss in a well-founded toxic tort case is therefore, first, a denial of justice to the Plaintiff and, much worse, encouragement to the Villain to continue to commit villainous acts, because the attempted deterrent failed. Perhaps the most important but least visible role is that played by the Hero's Troops, that is, the expert witnesses. They are not very noticeable in the Frame, but they play a crucial role. The Hero cannot win without them.

There is also a variant of the Public Interest Frame in which there is a contest over the public exposure of the Villain. This is desirable to many Plaintiffs, who wish both acknowledgement of the Victims' suffering and humiliation of the Villain. The Defendant often is willing to pay additional money in settlement to avoid a public trial and disclosure of the evidence against him; in such a

settlement, the proceedings and evidence are sealed. On the other hand, the Plaintiff may be willing to forgo substantial monetary gain and risk losing at trial in order to have his/her day in court so that the Villain can be exposed in the public interest.

The Corporate Interest Frame

The background of the Corporate Interest Frame includes the knowledge that, by law, corporate executives have the job of maximizing returns to the investors. Maximizing profit may well take precedence over taking precautions for public health and safety.

In the Corporate Interest Frame, the toxic tort trial is framed as a different kind of heroic battle. In this frame, the Victim is the Defendant (the corporation), the Villains are the Plaintiff and Plaintiff's Attorney, the Crime is a Shakedown of the corporation for profit, and the Plaintiff's expert witnesses are prostitutes (purveyors of "junk science" selling themselves), and a Secondary Victim is the Public, which must pay for the increased costs borne by corporations as a result of the lawsuit. The Heroes in this frame are conservative judges and legislators acting for "tort reform" who protect both the corporations and the public from "frivolous lawsuits." The trial lawyers who function as plaintiffs' attorneys are from this perspective Villains, unscrupulous mercenaries trying to make money by shaking down corporations and increasing costs to the public, thereby hurting the economy.

There is a variant on the Corporate Interest Frame, in which the Jury is portrayed as an accomplice to this shakedown. The corporate Defendant stands alone, opposed by not only the Plaintiff and the Plaintiff's Attorney but also by the Jury. The Jury is sympathetic to the plight of the Plaintiff, unsympathetic toward the corporate Defendant (or the doctor, even more, the insurer), and looks for "deep pockets" to provide resources to improve the situation of the injured Plaintiff. (Incidentally, this is myth. The claim that juries are anticorporate is not consistent with jury research findings.⁷) The Jury, gullible, and looking for excuses to help the Plaintiff, uncritically accepts whatever the Plaintiff's expert asserts. This is the Trial from Hell for the Corporate Defendant.

THE EFFECTS OF DAUBERT

All of the above metaphors and frames form the background for this paper. Against this background, I will assess *Daubert* in terms of its effects. Here is the short version: *Daubert* has a negative effect on the Plaintiff. It adds substantially to the usual burden of proof on the Plaintiff and to the power of the Judge to affect the outcome of the Trial.

If there is a *Daubert* hearing called by the Defendant, the Plaintiff has the burden of proving to the satisfaction of the trial judge that his expert witnesses do indeed have the expertise they claim and that their evidence would imply causation on the part of the defendant and relevance to the Plaintiff's claims. The judge can then decide on his own whether to exclude the evidence. If the judge excludes evidence crucial to the case, the result can be a summary judgment—a dismissal of the case and a victory for the Defendant.

Daubert can thus function in practice as a tool for conservative judges who favor corporate defendants. It can give them the extraordinary power, via a *Daubert* hearing, to exclude the Plaintiff's crucial expert witnesses and thus hand a victory to the corporate Defendant without the Jury ever hearing any evidence.

Joiner has effectively ruled out any appeal; it makes an appeal almost impossible by imposing an "abuse of discretion" standard. This is the hardest kind of appeal to win. Since the judge is given the power to act on his own discretion, one has to prove a clear "abuse" of that power—not just a mistake or a ruling against a prevailing view of science—but provable abuse, e.g., overt prejudice. This makes appeal virtually impossible.

And *Kumho* has extended *Daubert* from scientific expertise to other forms of expertise.

That is the simple story. But *Daubert*, when observed closely, does much more than that. It changes the very notion of a trial.

WHAT DAUBERT CHANGES CONCEPTUALLY

The point of a trial is to guarantee fairness, which is conceptualized metaphorically as balance or symmetry (think of the statue of Justice blindfolded and holding the scales).

But *Daubert* introduces the following asymmetries, which remove fairness.

- (1) The plaintiff has to win twice to win, once in the *Daubert* hearing and once in the trial. The defendant only has to win once, in *either* the *Daubert* hearing or the trial, if there is one.
- (2) In general, burden of proof is on the plaintiff (one asymmetry). In a trial where there is a *Daubert* hearing, the burden of being scientific and of relevance to causation may technically be on both parties, but if the judge throws out both parties' scientific evidence or that of the plaintiff, then the plaintiff loses and the defendant wins (two asymmetries).
- (3) *Daubert* motions are typically brought by the defense, not by the plaintiff. (In principle, they can be brought by both parties, but the impact differs because the plaintiff has the burden of proof.)
- (4) Research tends to be funded by the defense, which has more money for proving that its science is science. And a *Daubert* hearing tends to drain the financial resources of the plaintiffs and to force plaintiffs to expose more of their strategy and reasoning than would otherwise occur.

Thus, *Daubert*, while appearing to be a neutral matter of procedure, actually breaks the framing of fairness in the trial.

In the Trial Frame, the jury is supposed to decide the case. But *Daubert* allows the judge, not the jury, to decide the case. Not only that, but the judge can decide, case by case, whether he can decide.

The Trial Frame has a role for Witnesses. Witnesses are an inherent part of what a trial is about, and the jury is supposed to decide which Witnesses are credible. *Daubert* allows the judge to take that decision away from the jury. Thus, *Daubert* removes additional pieces of the Trial Frame. First, the judge can keep the jury from hearing expert witnesses. Second, if the plaintiff's experts are not heard, the judge may issue a summary judgment and throw out the plaintiff's case. In this case, the jury also doesn't get to see any evidence or hear any witnesses, expert or not.

In the Trial Frame, the Jury decides the official legal truth in the case at hand. That is the central job of the Jury—to determine which evidence is relevant, to weigh the evi-

dence, to deliberate and consider all the arguments on the basis of the evidence, and on such a basis, to decide what is true. However, *Daubert* enables the Judge to replace the Jury in its central role. *Daubert* allows the Judge to decide the official legal truth in the case. *Daubert* thus allows the removal of another central part of the Trial Frame.

In the Trial Frame, the judge acts as referee on the basis of his special competence. *Daubert* allows the judge not just to referee the trial, but also to decide the winner, not on the basis of special training or certification, but rather on opinion alone. *Daubert* thus allows for the change the role of the Judge within Trial Frame. *Daubert* is a powerful Weapon in the hands of a prejudiced judge.

Trial law is supposed to lead to fairness, minimizing the determinative effect of the political opinions of rich and powerful individuals. But, because politicians beholden to powerful political and economic interests can appoint judges to the bench, *Daubert* allows those interests to have full power to determine the outcomes of a wide range of cases without limit.

The concept of a trial not only has an ideal prototype—the Fair Trial—but also a nightmare prototype—the Trial from Hell. From the Plaintiff's perspective, the Trial from Hell looks like this: The Judge is prejudiced against you. You are denied the right to have your evidence heard by the Jury. And worst of all, the Judge can legally take the Verdict out of the hands of the Jury and decide against you himself on the basis of his prejudiced opinion. *Daubert* legalizes—and increases the probability of—the Plaintiff's Trial from Hell, and *Joiner* effectively denies the Plaintiff any appeal.

Daubert has a different effect on the Defendant's Trial from Hell. *Daubert* helps protect against the Defendant's Trial from Hell in the following ways: first, a *Daubert* hearing increases the cost of litigation for the Plaintiff and so lowers the probability that a complaint will be brought in the first place; second, a *Daubert* hearing decreases the probability that the Jury (the Plaintiff's accomplice) will ever hear the Plaintiff's evidence; and third, if there is a favorable judge, *Daubert* increases the probability that the Judge will throw the case out. Thus, for the corporate Defendant, *Daubert* provides insurance against a Trial from Hell.

SCIENCE ON TRIAL

Science itself is framed via an inherent metaphor as a judicial process for seeking the truth. Scientific "trials" are attempts to establish scientific truth on the basis of evidence. Scientists are expected to "make the case" for the truth of their theories on the basis of the evidence. The contenders in the scientific judicial process are the scientists with opposing views. The judges (playing the role of referee) are the peer reviewers. And the jury is the scientific community. In addition, there is a built-in mechanism of appeal to a wider scientific community, and sometimes to the public, say in the case of important innovative science not yet recognized by the scientific community. The effect of this inherent metaphor is to maximize openness and fairness, which are crucial to science.

Daubert puts science itself and scientists on trial. There are two charges: junk science and causal irrelevance. The district judge is both judge and jury. The judge usually has no scientific credentials or expert knowledge either in the science itself, in the philosophy of science, or in empirical studies of science.

The scientist-defendant has plenty to lose: his or her reputation for professional expertise, if deemed not an expert. And if the judge rules the science is "junk science," it sets a precedent for possible future trials. When a scientist is "Dauberted out" of a trial, the repercussions for the scientist are serious. And since the judge is virtually immune from appeal, there are no legal safeguards for the scientific expert against being judged scientifically incompetent by a scientifically incompetent judge. Moreover, a scientifically incompetent judge may pass serious judgment on an important area of science.

The effect of this is to make scientists less willing to put their reputation and the reputation of their scientific fields on the line for the sake of the public interest. It also makes it harder for plaintiffs to find scientific experts willing to testify. In short, the very fact of science being put on trial via *Daubert* tips the scales further against the public interest and toward corporate interests.

It should be noted that the term "junk science" is not a neutral term. It has been branded by conservatives. It has been used by

conservatives to mean “science whose results go against conservative values.” The “junk science” Web sites are conservative Web sites. The reason for this is that science, over the years, has played a significant role in the public interest. Scientific results have been used for the sake of public health, environmental preservation, and many public interest questions that fly in the face of the conservative agenda. The conservative response has been to impugn the offending science itself. *Daubert* has become one of the mechanisms for that. Indeed, a cottage industry has grown up for training corporate lawyers in how to attack scientists in *Daubert* hearings. The effect is chilling.

THE PRECAUTIONARY PRINCIPLE

In a criminal trial, the defendant is presumed innocent until proven guilty. This is entirely appropriate. However, this principle is often applied metaphorically in tort cases: Chemicals are produced by corporations for profit and placed into the environment and into our very bodies. In a toxic tort case, such chemicals are also presumed to be innocent until proven guilty. This is entirely unreasonable.

Criminals are usually put on trial for specific acts against specific people at specific times and places. Causation is relatively direct. But toxic chemicals, which have the potential to cause much wider harm than a criminal, typically work causally in multiple, indirect ways over long periods of time. It is hard to establish the cause of harm absolutely until after great harm is done. For this reason, the metaphor is inappropriate.

For the sake of protecting the public, some precautionary principle is necessary. *When chemicals, or dangerous practices, threaten harm to people or the environment, precautionary measures should be taken even if cause and effect are not conclusively established.*⁸ In other words, people and the environment should not be exposed to unnecessary hazards. Precaution requires different science than clearly establishing direct cause-and-effect relationships. That science has been developed in many cases. Is precautionary science “sound science”? That is not a scientific question, but a political one. If only direct cause-and-effect science is considered “sound,” then precau-

tionary science, one of the most important uses of science that we have, will not be.

Should precaution or cost-benefit analysis be the guiding principle in a toxic tort case? The decision may well affect future policy. Should district judges decide? Or juries? *Daubert* leaves it to the judges.

MORAL POLITICS

In my book, *Moral Politics: How Liberals and Conservatives Think*, I observed that conservative and liberal politics rest on the following two opposing moral systems derived from opposing models of the family: a strict father family in the case of conservatives and a nurturant parent family in the case of liberals.⁹ Here are the basic differences (in an overly abbreviated version):

The Strict Father Family

It is assumed that the world is dangerous and children are naturally bad and have to be made good. The father’s job is to protect and support the family. He is the moral authority, and his children are to respect and obey him and speak when spoken to. His moral duty is to teach his children right from wrong (there are rules that make the clear distinction) by physically punishing them when they do wrong, assuming physical discipline in childhood will develop the internal discipline adults need to be moral people and to succeed. This is called “tough love.” The child’s job is to obey. Punishment is required to balance the moral books; only punishment works. Children are to become self-reliant through discipline and the pursuit of self-interest. Competition is necessary for a moral world; without it, people would not have to develop discipline and so would not become moral beings. Worldly success is an indicator of sufficient moral strength; lack of success suggests lack of sufficient discipline. When children are mature, they should be able to make it on their own, and parents are not to meddle in their lives. Those who are not successful should not be coddled, but should be forced to become more disciplined on their own.

Conservative Politics

When translated into politics, the government becomes the strict father whose job is to support (maximize wealth) and protect (maxi-

mize military strength). The citizens are children of two kinds: the mature, disciplined, and self-reliant ones, who should not be meddled with; and the whining, undisciplined, dependent ones, who should never be coddled. This means (among other things) favoring those who control corporate wealth and power, who are seen as the best people, over those who are victims, who are seen as morally weak. It also favors removing government regulations, which are impediments to those who are disciplined and seeking their self-interest so as to become self-reliant. Nature is seen as a resource to be exploited. One-way communication translates into government secrecy. The highest moral value in strict morality is to preserve and extend the domain of strict morality itself, which translates into bringing the values of strict father morality into every aspect of life, both public and private.

Nurturant Parent Family

It is assumed that the world should be a nurturant place and that children are born good and should be kept that way. Both parents are equally responsible for running the household and raising the children. Their job is to nurture their children and raise their children to be nurturers. To be a nurturer you have to be (1) *empathetic* and (2) *responsible* (for oneself and others). Responsibility implies competence, education, hard work, protection, and social connectedness. Empathy requires (a) fairness, (b) open, two-way communication, (c) a happy, fulfilled life (unhappy people are less likely to want others to be happy), and (d) restitution rather than retribution to balance the moral books. Social responsibility requires cooperation over competition, and community building. In the place of specific strict rules, there is a general ethics of care that says, *Help, Don’t Harm*. To be of good character is to be empathetic and responsible.

Progressive Politics

In progressive politics, this translates into a morality based on empathy and responsibility—responsibility for oneself and social responsibility. The job of government is to care for and protect the population, especially those who are helpless, to promote the well-being of all, and to ensure fairness. There should be openness in

government. Nature is seen as a source of nurture to be respected and preserved. Empathy and responsibility are to be promoted in every area of life, public and private.

In general, conservatives are more aware than liberals of what their moral views are and how they relate to their politics. Liberals tend not to be able at present to articulate their moral views clearly or to translate them effectively into politics.

Moral Politics and the Trial Frame

The Trial Frame has parts of both models built in. Its means are strict: combative competition. However, the overall purpose of the trial is nurturant, in that its job is to guarantee fairness. In most cases, decisions are not made by one person in a superior position, but rather by a jury of one's peers.

In the ideal case, fairness between contestants is maximized. The judge has a limited strict father function: knowing right from wrong, interpreting the legal rules, and imposing his knowledge and authority. But, in principle, the authority of the judge is limited to points of law and proper trial procedure, with the purpose of giving rulings to guarantee fairness. If the judge is prejudiced, or if other unfairness comes in, there is an appeal to a higher court.

Daubert changes that by expanding the strict father role of the judge in two ways: first, *Daubert* turns the jury members into children whose role can be usurped by the strict father Judge when the Judge determines that *Father knows best* about whether the experts are really experts and their testimony shows causation; second, *Daubert* also expands the Judge's strict father role from guaranteeing fairness to determining outcome. The judge now has the power to decide the case via the *Daubert* hearing. From a Moral Politics perspective, the judge is not only the Moral Authority deciding points of law, but he is also deciding the case by excluding expert witnesses. The nurturant aspect of fairness via a jury of one's peers is greatly diminished because it can be removed by the judge. With *Joiner*, the right to appeal is effectively removed, reinforcing the strict father powers of the trial judge.

This is, of course, not the only kind of case in which a judge can determine a case. Compare a *Daubert* case with a criminal case in

which a judge decides that crucial evidence has been illegally obtained and throws out the case. Here the judge is taking on a nurturant role by requiring fairness in the proceedings. There is, of course, a corresponding political difference. This type of judicial action is favored by liberals (fairness trumps punishment), while *Daubert* summary judgments are favored by conservatives.

The point here is that *Daubert* does bring a conservative worldview, conservative moral values, and conservative politics into the courts. In the society as a whole, *Daubert* moves our culture in important ways toward a Strict Father worldview. That worldview is governed by the following values (among others):

- (1) Worldly power should correlate with moral authority.
- (2) The moral people are those whose self-discipline has allowed them to become self-reliant and able to take care of themselves. Those who cannot take care of themselves, who are at the mercy of others, need more discipline and should not be "coddled."

Daubert materially extends the power of Strict Father morality in the society as a whole by increasing the power (and wealth) of corporations *with legal sanction* and correspondingly decreasing the power (and wealth) of those who are harmed by corporations, and by giving a message to those who are harmed by corporations that they only have themselves to blame for being victims or, perhaps, that their problems are just bad luck, they have no recourse, and they should have none.

Politically, trial lawyers tend to be liberals; the wealthy ones tend to use their wealth to support liberal causes. Since the highest moral imperative for conservatives is to support and defend Strict Father morality itself, trial lawyers doing tort law are anathema to conservatives on the following grounds: the cases that trial lawyers win tend to support a liberal world view, the Public Interest Perspective, while conservatives tend to hold the Corporate Interest Perspective; and trial lawyers contribute money that they earn through verdicts they win to liberal causes and to the defeat of conservative causes. *Daubert* thus has a direct political role: it supports a conservative worldview over a liberal one, and it takes

a lot of money out of liberal coffers and keeps it in conservative coffers.

Technically, *Daubert* ought to apply beyond tort law to scientific and other experts in criminal cases. If it did, defendants in criminal cases (some facing the death penalty) could challenge the use of expert testimony (e.g., fingerprinting "experts") by the prosecution. If *Daubert* could be used in this way, it would work against application of the death penalty. But the vast majority of criminal cases are not federal cases, which is where *Daubert* applies. The actual effect once more is to spread the influence of Strict Father morality in society. *Daubert*, as applied, tends to protect the wealth and influence of corporations, to lessen the protection of ordinary citizens, and to forbid an important range of challenges to the death penalty.

Finally, *Daubert* has an interesting effect on scientists themselves. One of the *Moral Politics* findings was that many people have both strict and nurturant models in their lives and use them in different domains.⁸ Among scientists, a common pattern is for a scientist to insist on scientific authority while wanting his work to be used for the public good. That is, scientists may be strict fathers professionally and in the lab, but nurturant in their public and political values.

In most cases, such a distribution of values doesn't matter; it is rare that scientific values contradict the public good. But *Daubert* brings science and the public good together, in many cases bringing to the fore a scientist's opposing value systems in a single case.

Daubert is commonly represented by corporate spokesmen as defending real science against "junk science." This speaks to real scientists who, for good reasons, want to maintain the authority of real science and know all too well that "junk science" does exist. On the other hand, they often also know that most trial judges are not in a position to make serious judgments about science, that toxic tort cases are one of the only ways that the public can be protected against corporations that are negligent with respect to the public good, and that *Daubert* tilts the scales in the corporate direction.

In short, *Daubert* may well evoke a split in a scientist's value system. If a scientist accepts the representation of *Daubert* as merely following a procedure that works to defend the authority of

real science, he or she may think *Daubert* is a good idea without noticing its harmful effects. It is here that *Daubert* works very effectively as a conservative strategic initiative, achieving many goals at once, some of them in people's minds.

There is a movement among conservatives to make certain kinds of cases into federal cases, for example, class action suits that extend across state lines. The reason is that *Daubert* applies to federal cases and many conservative judges have been appointed to the federal courts. Conservative judges with *Daubert* at their disposal have the power to determine significant parts of a conservative agenda.

THE JUDGES' PERSPECTIVE

One can understand why radically conservative judges would like *Daubert*—it gives them unprecedented power to pursue a conservative agenda unchecked. But I have met liberal judges who also defend *Daubert*. Why?

I have encountered liberal judges who have told me, "I know junk science when I see it. Those cases should never even go to a jury." But judges have always had ways of dismissing cases for clear lack of evidence. *Daubert* doesn't change that.

I have heard another liberal judge defend *Daubert* on the grounds that it saves the time and trouble of a trial, and therefore allows other cases to be heard, cases that might be crowded out of court. This is a pragmatic argument about caseloads as a whole, not about individual cases. There are two problems with such an argument. Judges have not lost their ability to dismiss cases for clear lack of evidence. If the judge's pre-*Daubert* radar for a dismissible case is adequate, then *Daubert* isn't needed. If it is not adequate, how does *Daubert* give a judge better radar? It doesn't. What this means is that *Daubert* cases are more difficult, that it is less obvious that the science is not sound, and more likely that it is sound. And in such a case, shouldn't the jury be hearing all the evidence and arguments?

There is another issue here. Toxic tort and product liability cases are the public's last defense against unscrupulous or irresponsible corporations. They are typically cases where a punitive judgment against a defendant can prevent future harm to the public. In short, such cases are in themselves a form of the

Precautionary Principle in practice, tending to scare unscrupulous or lax corporations into taking the public interest more seriously.

Daubert, as we have seen, works overall against the public interest in such cases, and has become part of the arsenal of the radical right.

Liberal district judges with such views are therefore not looking at the big picture. *Daubert* is unfair to plaintiffs, gives an advantage to defendants, and thus makes it harder to gain access to the public's last line of defense. This endangers the public. When the public is endangered, caseload management should be beside the point. *Daubert* does not function in the public interest. As applied, it contributes to a decline in public safety and health standards.

CONCLUSION

Our system of justice requires that trials be maximally fair. It is part of what holds this society together. Indeed, it is part of the genius of the justice system to have a kind of balance between strict and nurturant morality within the judicial system itself, so that the system itself provides a kind of moral and political balance.

Daubert has upset that balance, making our judicial system significantly less fair and more politically conservative. *Daubert* is not just about the application of some procedural rule (Rule 702). *Daubert* functions in its application as a strategic initiative that significantly moves America in a conservative direction, in the moral and political spheres, as well as in the legal sphere. ■

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References

1. For more on the methods of cognitive analysis using cognitive linguistics, see Fauconnier G, Turner M. *The Way*

We Think. New York: Basic Books, 2002; Lakoff G, Turner M. *More Than Cool Reason*. Chicago: University of Chicago Press, 1989; Talmy L. *Toward a Cognitive Semantics. Volume 1: Concept Structuring Systems and Volume 2: Typology and Process in Concept Structuring*. Cambridge: MIT Press, 2000; Reddy M. The conduit metaphor. In *Metaphor and Thought*, edited by A. Ortony, Cambridge: Cambridge University Press, 1979:284–324; Boroditsky L. Metaphoric structuring: Understanding time through spatial metaphors. *Cognition*, 2000; 75(1):1–28; Sweetser E. *From Etymology to Pragmatics: Metaphorical and Cultural Aspects of Semantic Structure*. Cambridge: Cambridge University Press, 1990; Johnson C. Metaphor vs. conflation in the acquisition of polysemy: The case of see. In *Cultural, Typological and Psychological Issues in Cognitive Linguistics. Current Issues in Linguistic Theory*, edited by Hiraga HK, Sinha C, Wilcox S. Philadelphia: John Benjamins, 1997; 155-169; Lakoff G. *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind*. Chicago: University of Chicago Press, 1987; Johnson M. *Moral Imagination: Implications of Cognitive Science for Ethics*. Chicago: University of Chicago Press, 1993; Fillmore C. Frames and the semantics of understanding. *Quaderni di Semantica* 1985; 6:222–253; and Grady J. *Foundations of Meaning: Primary Metaphors and Primary Scenes*. Doctoral dissertation, University of California at Berkeley, 1997.

2. See Gibbs R. *The Poetics of Mind*. Cambridge: Cambridge University Press, 1994; Johnson M. *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. Chicago: University of Chicago Press, 1987; Rizzolatti G, Arbib MA. Language within our grasp. *Trends in Neurosciences* 1998; 21:188–194; Rizzolatti G, Fadiga L, Gallesse V, Fogassi L. Premotor cortex and the recognition of motor actions. *Cognitive Brain Research* 1996; 3:131–141; Regier T. *The Human Semantic Potential*. Cambridge: MIT Press, 1996; Narayanan S. *Embodiment in Language Understanding: Sensory-Motor Representations for Metaphoric Reasoning about Event Descriptions*. Doctoral dissertation, University of California at Berkeley, 1997; Narayanan S. *Talking the talk is like walking the walk: A computational model of verbal aspect*. Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society. Stanford University, August 7-10, 1997; Lewis D. Causation. *Journal of Philosophy* 1973; 70:556–567; Iaconi M, Woods RP, Brass M, Bekkering H, Mazziotta JC, Rizzolatti G. Cortical mechanisms of human imitation. *Science* 1999; 286: 2526–2528; Lakoff G. *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind*. Chicago: University of Chicago Press, 1987.

3. Lakoff G, Johnson M. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.

4. Lakoff G, Núñez R. *Where Mathematics Comes From*. New York: Basic Books, 2000.

5. Hart HLA, Honoré AM. *Causation in the Law*. Oxford: Oxford University Press; 1959:26.

6. For a detailed discussion of metaphor and modes of causal reasoning, see Lakoff G, Johnson M. *Philosophy in the Flesh*. New York: Basic Books, 1999.

7. Vidmar N. The performance of the American civil jury: An empirical perspective. *Arizona Law Review* 1998; 40:849–899.

8. Lowell Statement on Science and The Precautionary Principle. Available from: <http://sustainableproduction.org/precaution>. Accessed May 20, 2005.

9. Lakoff G. *Moral Politics: How Liberals and Conservatives Think*, 2nd ed. Chicago: University of Chicago Press, 2002.