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# The Paranormal, Daubert, Dictionary Court, and a Futuristic Courtroom Drama

Judge Joseph P. Baker\*

We perceive the world around us through a framework of beliefs much like glasses we wear on our noses and remain unaware of how they affect what we see.<sup>1</sup> We can easily take off the glasses and examine the tint and refraction. Self-examination of beliefs comes less easily, but it will reveal how we color and refract our experiences to fit our beliefs and do so very noticeably where that involves beliefs in the paranormal.

A Gallup Poll in 2001 reported half of Americans believed in psychic or spiritual healing and extrasensory perception (ESP), and a third believed in haunted houses, demonic possession, ghosts, telepathy, and extraterrestrial beings having visited earth or clairvoyance.<sup>2</sup> *National Geographic* of November, 2004, devoted its cover story to evolution and reported a survey finding only twelve percent of Americans believed humans evolved from other life forms, while nearly half believed God created human beings in their present form within the last 10,000 years.<sup>3</sup>

If we put those polls in the context of legal proceedings, it gives a reminder of the famous Scopes “monkey trial” of the 1920s dramatized in the play *Inherit the Wind*.<sup>4</sup> In a retrial today or revival of the play, William Jennings Bryan (Mathew Harrison Brady in the play) would still express the popular belief denying our ancestry traces back to slime on a rock by a primeval sea. The conclusion of this article will

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1. The simile comes from LUDWIG WITGENSTEIN, *PHILOSOPHICAL INVESTIGATIONS* §103, at 45 (G.E.M. Anscombe trans., 3rd ed. 1968).

2. Frank Newport & Maura Strausberg, *Americans' Belief in Psychic and Paranormal Phenomena Is up Over Last Decade*, *THE GALLUP POLL MONTHLY*, June 2001, at 14.

3. David Quammen, *Was Darwin Wrong?*, *NATIONAL GEOGRAPHIC*, Nov. 2002, at 6.

4. JEROME LAWRENCE & ROBERT E. LEE, *INHERIT THE WIND* (1955).

consider a sequel of that play dramatizing the consequences of a future where courts fully embrace science over alternative cosmologies.

The widespread belief in the paranormal reflected in those polls should come as no surprise. Children, as soon as they can log into a language, begin to hear stories about ghosts, haunted houses, and monsters. They receive as gifts android, walking and talking dolls some with superhuman abilities. Anthropomorphism adds a number of paranormal featherless bipeds to earth's population as, for example, a mouse that speaks, reads, writes, dresses in human clothing, dances, and regularly leads parades. Popular media regularly reinforce belief in the paranormal, as in television programs portraying psychic detectives using supernatural powers to guide police investigations where traditional police techniques have failed.

With language, children learn the myths and techniques of their culture on all sorts of matters. Parents teach children how things work, which present dangers, which can be fun and how to engage in activities with others. Most of the shared myths and techniques must be sound for the society to thrive, but unprovable, paranormal beliefs do have a role in every culture.

In a legal context this accumulation of learned beliefs usually goes as "common sense,"<sup>5</sup> and the same accumulation is also known as "folk psychology." An essential axiom of both common sense and folk psychology maintains human behavior to be *intentional*.<sup>6</sup> For folk psy-

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5. For common sense and folk psychology in a legal context, see Ronald J. Allen, *Common Sense, Rationality, and the Legal Process*, 22 *CARDOZO L. REV.* 1417 (2002). Evidence professor Ron Allen traces the history of "common sense" as it bears on law and relates that to folk psychology. He discusses the use of common sense and folk psychology in American jurisprudence and as the foundation for intentionality in legal theory. His folksy article, drawn from a speech, anticipates many themes presented in my article.

6. For a description of folk psychology and intentional behavior see Murray Shanahan, *Folk Psychology and Naïve Physics*, in 2 *CONNECTIONISM, CONCEPTS, AND FOLK PSYCHOLOGY: THE LEGACY OF ALAN TURING* 168, 168-173 (1996); Jane Heal, *Replication and Functionalism*, in *FOLK PSYCHOLOGY* 45 (Martin Davies & Tony Stone eds., 1995) (discussing two theories of folk psychology); PATRICIA SMITH CHURCHLAND, *NEUROPHILOSOPHY: TOWARD A UNIFIED SCIENCE OF THE MIDDLE-BRAIN* 299 (1989); PAUL CHURCHLAND, *MATTER AND CONSCIOUSNESS* 58-9 (rev. ed. 1988). Patricia Churchland and her husband would replace folk psychology, if they could, but Patricia Churchland told me in email correspondence that neurology has not advanced to the stage where it could give a better explanation of intentional behavior than does folk psychology. She and her husband discuss folk psychology quite cogently as a shared and learned belief-desire psychology that makes human behavior *intentional* and therefore *predictable*. Patricia Churchland also assured me that I am "essentially correct" when I interpret "belief" as a term of wide and imprecise scope in her and her husband's belief-desire psychology. They and I use the term very imprecisely to include religious beliefs, hopes, fears and so forth. I also include beliefs in the paranormal to the extent they influence behavior in the same manner as religious beliefs. Of course, persons differ on what amounts to a belief. You may be offended at what

chology and common sense, an unquestioned and unquestionable article of faith assumes persons act as they do because they *intended* to act that way based on their “inner” beliefs. Willie Sutton intended to rob banks because he believed “that’s where the money is.” By “inner” we mean that intentions and beliefs are intangible, not physical parts of our bodies.

To understand folk psychology, computers provide a handy analogy. No one who has ever used one can doubt the stupidity of computers. The ontogeny of computers cannot possibly recapitulate billions of years of phylogeny that led to human brains. Even so, observing a computer leads to assuming it has an operating language (binary machine code) that programmers can configure into patterns (analogous to sentences in ordinary language) giving instructions as to how the computer reacts to input. We can analogize these patterns or programs with beliefs by which humans interpret input and make intentional decisions to act.<sup>7</sup> Folk psychologists say we learn these beliefs at mother’s knee and need them to intentionally interact with other persons.<sup>8</sup> Simultaneously, and in the same way, we learn to make necessary predictions about how other animate and inanimate things behave.<sup>9</sup>

Human civilizations could not exist or perpetuate themselves without some sort of folk psychology transmissible by language. Oral, traditional societies successfully preserved themselves and transmit-

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I call your belief, for it may be fact to you. Ambrose Bierce defined “scriptures” as “The sacred books of our holy religion, as distinguished from the false and profane writings on which all other faiths are based.” AMBROSE BIERCE, *THE DEVIL’S DICTIONARY* 167 (Laurel Book 1991) (1911). Such may be said of beliefs generally. A precise definition excluding ambiguity for “belief” or “folk psychology” cannot be given.

7. See, e.g., JERRY A. FODOR, *THE LANGUAGE OF THOUGHT* 65-68, at 55 (paperback ed. 1975) (using the computer analogy to illustrate an “innate” “private language” of thought); see also, JERRY A. FODOR, *THE MIND DOESN’T WORK THAT WAY* (paperback ed. 2001) (discussing Computational Theory of Mind); HILARY PUTNAM, *REPRESENTATION AND REALITY* 4-7 (paperback ed. 1991) (discussing the computer metaphor and Fodor’s use of it); PATRICIA CHURCHLAND, *supra* note 6, at 252 (identifying the forces that converged to give “the now-familiar and virtually doctrinal computer metaphor”).

8. See John Heil, *Being Indiscrete*, in *THE FUTURE OF FOLK PSYCHOLOGY: INTENTIONALITY AND COGNITIVE SCIENCE* 123 (John D. Greenwood ed., 1991), who compares folk psychology with “an implicit ‘ur-theory,’ the roots of which lie in the intentional vocabulary we learn at our mother’s knee.” See also PAUL CHURCHLAND, *supra* note 6, at 58-59 (describing folk psychology as a collection of “common-sense generalizations” explaining how persons behave, and, “All of us learn that framework (at mother’s knee, as we learn our language), and in doing so we acquire the common-sense conception of what conscious intelligence is.”).

9. This has been called “naïve physics,” as in Shanahan, *supra* note 6, at 169, 175-79 (1996). It is also sometimes called “folk physics” or “intuitive physics” to distinguish these beliefs from folk psychology. PATRICIA CHURCHLAND, *supra* note 6, at 290, 300-01.

ted their various commonly held, everyday beliefs over many generations before the invention of writing.<sup>10</sup>

Clinical studies have shown how children begin at about age four to be able to predict behavior of other children acting on a false belief known by the subject child (knower) to be false but not the other child (false believer).<sup>11</sup> Folk psychologists interpret this to show humans at this age acquire a conceptual scheme, a folk psychology which allows understanding that others have different mental states from one's own on which they act intentionally and predictably from what they believe. This also demonstrates the self-evident fact people often act on false beliefs as well as sound ones.

American courts and legal professions pride themselves on their democratic openness and tolerance to where not only jurors but lawyers and judges come from a wide cross section of society. Legal professionals and jurors cannot help but bring to court the folk psychology of their community. Consciously and subconsciously they insinuate common, everyday beliefs into our legal system, and that necessarily carries with it some popular beliefs in the paranormal contained in folk psychology.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,<sup>12</sup> Justice Blackmun, writing for the Court, pointedly expressed the Supreme Court's concern to distinguish the paranormal from admissible science. He wrote that experts may provide "valid scientific 'knowledge'"<sup>13</sup> about phases of the moon bearing on darkness of a particular night in a case where that was relevant. He then wrote

However (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night. Rule 702's "helpfulness" standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.<sup>14</sup>

*Daubert* found Federal Rule of Evidence 702 had superseded the previous standard of "general acceptance" in a scientific field as the threshold for admissibility of expert testimony announced in *Frye v.*

10. Daniel Dennett discusses cultural transmission and evolution through language and what he calls "memes," a word coined because of its similarity to "genes." DANIEL C. DENNETT, *DARWIN'S DANGEROUS IDEA: EVOLUTION AND THE MEANING OF LIFE* 335, 344-52 (1995).

11. Martin Davies & Tony Stone, *Introduction in Folk Psychology*, *supra* note 6 at 1, 2-6.

12. 509 U.S. 579 (1993).

13. *Id.* at 591.

14. *Id.*

*United States*.<sup>15</sup> To disallow testimony of the paranormal *Daubert* decided expert witnesses must pass an entrance examination on their “valid scientific ‘knowledge.’”<sup>16</sup> It gave trial judges the responsibility of devising and administering these admission tests case by case.<sup>17</sup>

The Chief Justice remarked that in taking over the responsibility to test scientific evidence with an admissions test, trial judges did not have “either the obligation or the authority to become amateur scientists in order to perform [their gatekeeper] role.”<sup>18</sup> Judges would have cross-examination and other challenges to proffered experts in an adversarial proceeding, but presumably the underlying framework for testing evidence lies in the common denominator of common sense and common, everyday beliefs of the judiciary, that is, in folk psychology.

And why not? Scientists come into the world the same way as everyone else. They also must have learned an ordinary language and learned the prevailing everyday beliefs of family and community as they grew up. We have no less an authority than Albert Einstein that science arises from and depends on everyday beliefs, that is, on folk psychology. Einstein wrote:

The whole of science is nothing more than a refinement of everyday thinking. It is for this reason that the critical thinking of the physicist cannot possibly be restricted to the examination of the concepts of his own specific field. He cannot proceed without considering critically a much more difficult problem, the problem of analyzing the nature of everyday thinking.<sup>19</sup>

In his opinion in *Daubert*, Justice Blackmun cited and discussed thirty-seven<sup>20</sup> *amicus* briefs and other secondary sources from the scientific community “markedly different from typical briefs”<sup>21</sup> on science as scientists see it. The acts of submitting and receiving these briefs amount to a dialogue, a dialogue showing both scientists and legal professionals assumed they shared a common language. Dialogue involves mutuality. It involves mutuality of both shared language and shared beliefs in order to communicate. *Daubert* implicitly holds judges

15. 293 F. 1013 (D.C. Cir. 1923).

16. *Daubert*, 509 U.S. at 591.

17. *Id.* at 592.

18. *Id.* at 601.

19. ALBERT EINSTEIN, *OUT OF MY LATER YEARS* 59 (1967). See WILLARD VAN ORMAN QUINE, *WORD AND OBJECT* 3 (1960) (“Scientific neologism is itself just linguistic evolution gone self-conscious, as science is self-conscious common sense.”). Wilfred Sellars develops the same distinction, but he calls it a distinction between the “manifest image” and the “scientific image.” WILFRED SELLARS, *SCIENCE, PERCEPTION AND REALITY* 4-40 (1963).

20. 509 U.S. 579 (the Chief Justice giving this number).

21. *Id.* at 599 (the Chief Justice’s phrase).

should operate within ordinary language and folk psychology understood by those outside of legal professions as well as vice versa.

Scientists, as Justice Blackmun observed, see science as a method epitomized in the vetting process of publications that requires review by peer scientists prior to publication and exposes claims of scientists to unlimited criticism after publication.<sup>22</sup> Justice Blackmun acknowledged that scientists do not claim an "encyclopedic body of knowledge about the universe," but rather describe science as a "*process* for proposing and refining theoretical explanations about the world that are subject to further testing and refinement."<sup>23</sup>

After that summary of scientific method, Justice Blackmun gave the Court's conclusion: "In short, the requirement that an expert's testimony pertain to 'scientific knowledge' establishes a standard of evidentiary reliability."<sup>24</sup> The Chief Justice in a separate opinion noted how Justice Blackmun constructed his argument by parsing the language of Federal Rule of Evidence 702 to isolate "scientific. . . knowledge" and looking up definitions of those words in a standard dictionary.<sup>25</sup>

"Define your terms." Everyday experience teaches the universal insistence on definitions in argument on any subject. Demand for definitions has become the first axiom of folk psychological belief about argument. It has made dictionaries the bible of argument and exposition, the ultimate authority, the "final court of appeal to which any disputes about diversity of practice, or 'correctness,' could be referred."<sup>26</sup> Folk belief attributes to dictionaries an omniscience that smacks of the paranormal.<sup>27</sup> In accordance with these folk beliefs the *Daubert* court looked to dictionaries as a super court whose dictates even the Supreme Court must follow. Can anyone imagine the Supreme Court deciding to overrule dictionaries?

But dictionaries do not offer an unbiased court to follow to separate the paranormal from science as attempted in *Daubert*. Dictionary definitions come from lexicographers collecting common usages of

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22. *Id.* at 593-94. This view of scientific method I believe to be a fair interpretation of Justice Blackmun's opinion. I am not ignorant of the controversy and debate over just what scientific method is, but Justice Blackmun's summary provides a workable formulation of scientific method.

23. *Id.* at 590 (italics in the original).

24. *Id.*

25. *Daubert*, 509 U.S. at 599.

26. ROY HARRIS, *THE LANGUAGE-MAKERS* 132 (1980).

27. "[T]he dictionary came to be seen as the repository of verbal meanings *par excellence*, regarded with a veneration and respect for authority amounting in certain cases almost to superstition." *Id.* at 78.

words.<sup>28</sup> Those definitions can hardly give the user of a dictionary a transparent glimpse of science, for definitions tint and refract science through folk beliefs imbedded in ordinary language usage.<sup>29</sup>

Though they hold biblical status in folk reasoning, dictionary definitions provide very unstable grounds for decisions. Modern language studies have shown very few terms, if any, of ordinary language can be defined.<sup>30</sup> Moreover, linguists join other scholars who study language in unanimously holding words function only within a web or network of a language. One metaphor suggests we visualize words as beads on strings that users of a language weave into a fabric of discourse.<sup>31</sup> Studies of ordinary communication make it obvious why “language” does not function as an independent collection of words and rules of grammar. Communication depends on all aspects of context, gestures, tone of voice, tacit understanding between interlocutors, and so on.<sup>32</sup>

These assertions from linguists and others who study language easily pass the “smell test” of common experience with ordinary language that trial judges all have. They would notice first that definitions obviously change. As science and technology progress, they modify the framework in which our community understands the world around it. This changes how persons use words and how dictionaries define them. Today we could define “water” as “H<sub>2</sub>O,” but that definition would have baffled Shakespeare. Only a charitable reading of our forebears allows reading terms from their time as apposite now.<sup>33</sup> The authors who granted power to “regulate Commerce” in the Constitu-

28. *Id.* at 147. See also WILLARD VAN ORMAN QUINE, *FROM A LOGICAL POINT OF VIEW* 24-27 (rev. ed. 1961).

29. As Jacques Derrida wrote, “Now, ‘everyday language’ is not innocent or neutral. . . . [I]t carries with it not only a considerable number of presuppositions of all types, but also presuppositions inseparable from metaphysics, which. . . are knotted into a system.” JACQUES DERRIDA, *POSITIONS* 19 (Alan Bass trans., paperback ed. 1982).

30. HARRIS, *LANGUAGE-MAKERS*, *supra* note 26, at 127-28; VAN ORMAN QUINE, *WORD AND OBJECT*, *supra* note 19. “[M]ost terms *cannot* be defined – or, at least, cannot be defined if by a ‘definition’ one means something that is fixed once and for all, something that absolutely captures the meaning of the term.” HILARY PUTNAM, *REPRESENTATION AND REALITY* 9 (paperback ed. 1991).

31. IVAN ILLICH & BARRY SANDERS, *ABC: THE ALPHABETIZATION OF THE POPULAR MIND* 7 (1988).

32. ROY HARRIS, *THE LANGUAGE MYTH* 55, 155 (1981). This work erases the myth about language being something separate from the rest of human behavior. Treating it as separate led to decontextualizing language. When cultures become literate and fix language with words and spaces on pages this facilitates decontextualizing language and detaching it from other behavior.

33. PUTNAM, *supra* note 30, at 13.

tion<sup>34</sup> could not possibly have contemplated telecommunications, transportation and global trade that characterize commerce today in using that phrase.

Everybody who has used dictionaries knows they give definitions of each word with other words. For a definition to capture and fix any word it defines, a dictionary must define the words of the definition. The definition then needs definition. This regression goes on and on and requires a large part of the dictionary if not all of it to define even the simplest and most common word.<sup>35</sup>

A famous illustration of the open-ended nature of definitions asks how to define the word "game."<sup>36</sup> "Game" includes activities engaged in by many, a few, two or one. It can include games played to win or not (peek-a-boo). It can include games for fun or not (gladiatorial games, professional sports). "Game" can be used for the prey of a hunt, as well as a scheme, a plan or a deceit ("Stop playing games with me"), and courage ("He showed he had a game heart"). Some have used "game" to describe litigation. We can see that no conceivable definition could capture any essence common to all of these uses of "game."

The uncertainty of dictionary definitions reveals something very notable. It does not hinder in the slightest use of the word "game" in ordinary discourse. The ordinary language, and everyday working

34. U.S. CONST. art. I, § 8, cl. 3.

35. HARRIS, *THE LANGUAGE MYTH* *supra* note 32, at 169. Jacques Derrida "deconstructed" dictionaries in a quite simple manner made obscure by his enigmatic style of writing. Derrida began by accepting Saussure's pioneering work for modern linguistics that treated language structurally with words as signs and elements of language. Saussure proposed a model under which each word-sign has two faces, one face that made the word sensible (visible or audible) and the other face made it intelligible (gave it meaning). Saussure called these two faces respectively the signifier and the signified. Saussure illustrated the two faces with the simile of a page. The signifier face of the word lies visible on one side of the page. The visible signifier has an unseen and unseeable face on the reverse side of the page, namely, the signified. The invisible signified, the back side of the sign, gives sensible word-signs meaning by pointing to things. According to Saussure's linguistic theory, words had to have both faces to function as a medium of communication. That model demonstrated, Saussure thought, how words could be written down on a page and refer to things. Ordinary language in this country does not commonly use the word "signified." The unseen and unseeable face of a word that gives a word meaning by pointing to or referring to something is popularly called the "concept" behind the word. But, if one looks in a dictionary to the alphabetical list of signifiers (printed words) in quest of finding signifieds or concepts behind the visible printed words on the page, the quest will always prove futile. One can only find signifiers staring back and pointing to other signifiers that are listed alphabetically elsewhere in the dictionary. The quest for a signified in a dictionary leads only in a circular and endless pursuit. He has "deconstructed" dictionaries in a manner similar to Roy Harris. For a reasonably lucid description of this "deconstruction" see GEOFFREY BENNINGTON & JACQUES DERRIDA, *JACQUES DERRIDA* 23-42 (Geoffrey Bennington trans., 1993).

36. WITTGENSTEIN, *supra* note 1, § 3, at 3, §§ 68-75, at 32-35.

beliefs we learned at mother's knee, did not require a dictionary. What suffers is folk psychology's veneration for dictionaries as the super-supreme court that brings finality and precision to words and language in ordinary or professional discourse.

To reach its decision in *Daubert*, the Supreme Court relied on common sense and a folk psychological belief in dictionaries, but on examination this belief proves unsupportable. If courts chose to find a more stable foundation, they could kick over the traces, and fully embrace science. Courts would have no difficulty delimiting and identifying science. Courts could recognize science as Florida A&M University and every other university in the country do. Universities are not paralyzed by indecision in awarding Bachelor of Science degrees because science cannot be defined in a dictionary. Although some quibbling exists at the perimeters, outlines of science appear in university curriculums under the rubric "sciences."<sup>37</sup>

Scientists and nonscientists recognize as science the work of the network of professional scientists at universities, researchers in commercial and industrial corporations and nonprofit organizations and government agencies who rely on and publish in prominent scientific journals devoted to those university-recognized sciences.<sup>38</sup> The briefs they submitted in *Daubert* confess scientists cannot give absolutes, but they have proven they can deliver the goods better than anyone else as shown by scientific and technological achievements. The way universities identify science works for them, works for scientists and nearly everybody else.

Virtually all of this congeries of scientists believes our universe began with some sort of cosmic explosion. During many billions of years, gases congealed into fiery suns, and a few clumps of matter became planets, our rocky earth being one. Almost unanimously, scientists believe that beginning three or four billion years ago and purely from the interaction of physical matter promoted by energy from the sun carbon-based molecular structures with a self-replication mecha-

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37. Sociologists of science, historians of science, and philosophers of science have questioned the view of science held by most scientists, but this has not precluded recognition of science as given here in social and educational institutions and by most nonscientists. Very few persons would protest at not receiving a Bachelor of Science degree in English literature or history or business administration or law. Not being considered a science for degree purposes should not denigrate human sciences and social sciences. Using "science" in this way comports with common usage acceptable within and without the community of those with BS degrees, within and without academic communities.

38. The prominence of institutions is probably due to the degree to which science has become dependent on advanced technology, and only large institutions can afford the equipment for scientific research.

nism based on DNA developed on our planet. These structures incorporated into cells, followed by multicellular organisms that evolved into the array of organisms inhabiting the earth today including humans.<sup>39</sup>

We can see how unconditional reliance on physical sciences to the utter exclusion of all paranormal and folk beliefs would reshape our court in a sequel to *Inherit the Wind*.<sup>40</sup> In the original play, the trial judge refused to admit testimony from any of a battery of eminent scientists to show the validity of evolution.<sup>41</sup> The sequel could be set in the not to distant future, and the playwright could assume that by then every trial and appellate judge would have been thoroughly schooled in evolution's teaching that humans can claim no essential difference in mind or spirit from other creatures. Therefore, judges would reject folk beliefs in anything supernatural – not explainable in natural, material terms.

A biblical title such as that of the original play would no longer be appropriate,<sup>42</sup> and the sequel might take the title, "Inherit the DNA," or, more catchy perhaps, "Man: Monkey and Machine." The sequel, rather than focusing on cross-examination of fundamentalist William Jennings Bryan (Brady in the earlier play), would make neuroscientists the protagonists. Expert neuroscientist witnesses would testify their science has a scientific explanation that reduces the law's folk psychology to material, electro-biochemical processes of the brain. They will say neuroscience has dispensed with our species' claims to the disembodied, immaterial ideas, thinking, and feelings that have long been asserted by human beings to define themselves (*Homo sapiens*) as distinct from other creatures. These neuroscientists would testify Scopes could not have had criminal intent that directed his behavior because neuroscience has accounted for, and reduced, the law's intent and all other *mens rea* to terms of brain physiology.<sup>43</sup>

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39. See generally PAUL CHURCHLAND, *supra* note 6, at 123 (explaining the evolutionary background and development of the central nervous system and brain). Scientific cosmology and evolution is so widely taught in schools and publicized elsewhere citing further authorities would be superfluous.

40. LAWRENCE & LEE, *supra* note 4.

41. The judge explained, "The language of the law is clear; we do not need experts to question the validity of a law that is already on the books." *Id.*, act two, sc. II.

42. "*Inherit the Wind*" comes from *Proverbs* 11:29 (King James), "He that troubleth his own house shall inherit the wind; and the fool shall be servant to the wise of heart."

43. In PATRICIA CHURCHLAND, *supra* note 6, one reads a comprehensive argument showing the possibility of such testimony as neuroscience develops to the degree of reducing and eliminating immaterial mind or spirit to brain physiology. See PAUL CHURCHLAND, *supra* note 6, for a shorter but also comprehensive argument supporting the same reduction of the immaterial to the material brain.

Some legal scholars dismiss the possibility that neurology could subsume folk psychology and law as no more than a dream, a fantastic science fiction.<sup>44</sup> Patricia Churchland acknowledges neurological studies have not yet reached the level that can satisfactorily reduce all consciousness to brain states and processes.<sup>45</sup> But, based on the rate of advance in discoveries about the brain, she believes that likely to come sooner rather than later.

In the scenario for our future play the courts would necessarily submit neuroscientist witnesses to a *Daubert*-style examination before they accepted the discrediting of folk psychology and completely came over to science. Expert witnesses would show deep, strongly constructed foundations for neuroscience from a long history of careful, methodical development. It has engaged in continuous testing and vetting through centuries of open scientific debate.

Almost thirty years before the American Revolution, Julien Offray de La Mettrie portrayed humans in purely material and mechanical terms comparing them to a machine.<sup>46</sup> After La Mettrie, but still in the eighteenth century, Franz Joseph Gall did pioneering studies of the composition and operations of human brains, and even made crude maps of the brain. Unfortunately for Gall's historical reputation, he got off on the wrong path in believing the brain affected the shape of the cranium such that the brain could be read by palpating the skull, leading to the practice of phrenology.<sup>47</sup> (One can speculate whether eighteenth century courts would have allowed Gall's expert testimony about an accused after a phrenology examination, but that's another play.)

Gall had only very simple medical devices, but he collected and analyzed commonplace events that showed the connection between head and brain injuries, all motor and sensory faculties, speaking and thinking capacity, and memory. Gall examined and dissected whatever brains he could get his hands on from deceased persons and

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44. See SUSAN HAACK, *EVIDENCE AND INQUIRY: TOWARDS RECONSTRUCTION IN EPISTEMOLOGY* 158 (paperback ed. 1995), arguing Patricia and Paul Churchland have "subverted" science in a radical and unacceptable way. See also HAACK, *DEFENDING SCIENCE – WITHIN REASON* 154-61 (2003), where Susan Haack explains "The Question of Reduction." She writes, "Reductionism. . . is the thesis that the vocabularies of the other sciences, the social sciences included, can in principle be expressed in terms of the vocabulary of, and their laws derived from the laws of physics." *Id.* at 154. While conceding that the brain plays a large role in human perception and behavior, intention retains a role.

45. PATRICIA CHURCHLAND, *supra* note 6, at 277, 326; see also text accompanying note 6.

46. JULIEN OFFRAY DE LA METTRIE, *MAN A MACHINE* (Gertrude C. Bussey & M.W. Calkins trans., Open Court 1912) (1748).

47. PATRICIA CHURCHLAND, *supra* note 6, at 155-59.

observe in open head injuries. Scientific vetting separated the wrong fork from the right one in Gall's work. Following this, correct folk neurologists can now accurately map the brain location areas that control sensations of sight, sound, smell, taste, speech, memory, and other aspects of sleep and consciousness. Comparative physiology has shown modern neurologists how the brains of other creatures work the same way as human brains, that is, with minute electrical impulses and biochemical interactions, tying all creatures together in the tree of life.

Even with today's technology, much of intentional behavior has been reduced to algorithms, and neuroscientists would say that with algorithms computers can do what you can do, and they can do it better.<sup>48</sup> That applies to playing chess, making bank loans, predictions of weather, elections, and legal research. Neuroscientist witnesses simply assert physiological processes of the brain cause *all* human behavior in a manner analogous to a computer rather than only *some* behavior as recognized today.

In this new play, art imitates reality. Courts have recognized that the brain and its physiological processes control the human ability to form intentions. Courts have admitted neurological tests showing lesions and deficiencies of the brain as evidence demonstrating diminishment of capacity for criminal intent, especially in capital cases.<sup>49</sup> Since we have ample legal precedent recognizing the controlling power of the brain over behavior, the possibility of reducing legal processes to brain processes does not come across as quite so wild.

The plot definitely thickens with these neuroscientist witnesses. Since their origins, Western cultures have held that each person carries inside them a "ghost" or what has figuratively been called a

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48. See DENNETT, *supra* note 10, at 60, where Daniel Dennett writes, "This idea, that all the fruits of evolution can be explained as the products of an algorithmic process, is Darwin's dangerous idea."

49. *E.g.*, Crook v. State, 813 So. 2d 68 (Fla. 2002); Hoskins v. State, 702 So. 2d 202 (Fla. 1997); Jessie A. Seiden, *The Criminal Brain: Frontal Lobe Dysfunction Evidence in Capital Proceedings*, 16 CAP. DEF. J. 395 (2004) (concentrating on Virginia capital cases). See, *e.g.*, M.C. Brower & B.H. Price, *Neuropsychiatry of Frontal Lobe Dysfunction in Violent and Criminal Behavior: A Critical Review*, 71.6 J. NEUROL. NEUROSURG. & PSYCHIATRY 720 (2001) for neurological studies showing the relationship between the brain and criminal conduct. These minimal citations focus on a narrow section of neurological evidence and fall within the spectrum of forensic psychiatric and neurological evidence of mental retardation, insanity and mental illness that bears on criminal *mens rea* and responsibility. That in turn falls within the context of expert medical evidence, in the context of medical science, in the context of medicine, in the context of sciences, human, social and physical. Those lie in the context of belief systems, which fall within more and more comprehensive contexts. One must explain all of those contexts to explain their subsystems, but that will not be attempted in this footnote. See HARRIS, LANGUAGE, *supra* note 32 and accompanying text; BENNINGTON & DERRIDA, *supra* note 35, at 84-98 (expanding "context").

“homunculus,” a little, intangible, paranormal person residing within. This ghost gets called many names, “soul,” “spirit,” “psyche,” “mind,” “demon,” and so on, but I will use “homunculus” as a catchall. Only believing in such a paranormal homunculus permits out-of-body experiences and communications with supernatural spirits and spirits of the dead.<sup>50</sup> The immaterial homunculus does not confine itself to what is usually called “paranormal,” but appears prominently in religion and everyday folk beliefs, and in court.

Legal professionals have woven our culture’s myths, shared by religion, psychology, and folk psychology, into law where our intentions dwell in this “inner,” immaterial homunculus. As noted before, the main purpose of folk psychology assumed in law is to explain and justify *intent* as controlling behavior. Criminal law depends on intent as a body-independent mental activity that causes individuals to act. Only with such a bodiless intent can our law identify criminal acts and measure intent to determine the degree of culpability. Torts, as compensable wrongs, have an abstract mental component of intent or neglect. Contract law depends on intent as a meeting of the homunculi, independent of whether, and how, the bodies of contracting parties have met. American law asserts this homunculus of intent lies within documents, whispering the message behind the text. Some perceive this homunculus behind the Constitution as bringing forward its “original intent” and translating it from eighteenth century English usage that has become archaic.

We have now laid out the conflict that will drive the new play to a resolution. It will differ from the first play and differ from the Supreme Court’s resolution of *Daubert* and the trial court’s conclusion of Mr. Scopes’ case. The scenario for our futuristic play will make neuroscientist witnesses the protagonists. They will deny that homunculi, or any other immaterial conceptual creation, have any weight on a balance scale with evolutionary science. They will undermine the foundations of established legal theory by eliminating from court intent, beliefs, folk psychology, and reasoning.

In this sequel we have a role reversal. The William Jennings Bryan part (Mathew Harrison Brady in the 1955 play) becomes the antagonist and hero to the rescue of common sense, folk beliefs, and established jurisprudence. The denouement would come when the nouveau retro Bryan (Brady) cross-examines a neuroscientist. He would follow the same strategy as Clarence Darrow in Scopes (Henry

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50. A very inclusive collection of paranormal accounts, theories and experiences can be found at <http://www.coasttocoastam.com>. This is the website of the regular, popular, nationally broadcast radio program *Coast to Coast AM* devoted to the paranormal.

Drummond in *Inherit the Wind*). He would exploit the paradoxes of scientific theory in the same way that Darrow (Drummond) had exploited inconsistencies in Biblical cosmology.

Bryan (Brady) would ask these kinds of questions in cross-examination. If your science eliminates belief, how can one believe belief has been eliminated? How can the scientist reason, from accumulated data about the brain, that reason eliminates reasoning as a meaningful activity? If natural forces and matter have determined everything since the original cosmological big bang, doesn't that eliminate all spiritual input, human or divine? Doesn't that lead to nihilism? Doesn't that eliminate even the possibility of a distinction between truth and falsity? Then, how could a neuroscientist take the oath to tell the truth in court after admitting the witness cannot tell truth from falsehood?

Your witness, Mr. Darrow!