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LACAN, SCIENCE, AND LAW: IS THE ETHNOGRAPHY OF  
SCIENTISM PSYCHOANALYTIC?

**ABSTRACT.** By adopting an idealized conception of the scientific enterprise, mirroring scientists' own self-conception, courts minimize the social and rhetorical aspects of science as ornamental, contingent, and eliminable. Lacan's reflections on science, and on the question of whether (or in what sense) psychoanalysis is scientific, parallel and enrich the efforts in science studies to show that the social and rhetorical aspects of science are co-productive, constitutive, and inevitable. Specifically, Lacan's identification of science as a discourse in denial of its subjectivity leads to a psychoanalytic re-orientation of ethno-methodology – an anthropological approach now favored in science studies. In the context of litigation involving scientific expertise, attorneys already assume, in their depositions and cross-examination, the role of ethnographers on foreign ground, but to the extent that the discourse of science replaces or dominates the discourse of law, legal ethnographers should also assume the role of analysts exploring the unconscious of science.

**KEY WORDS:** ethnography, expert testimony, Lacan, psychoanalysis, rhetoric, science, sociology of science

Dr. Max v. Forschung, . . . fortunate author of brilliant physiological and bacteriological discoveries, . . . had thin lips that . . . formed simple, precise words, for he was accustomed to conveying the truth without veils or rhetorical artifices.<sup>1</sup>

So begins Cajal's "vacation story" (written in 1885–1886) of a scientist who discovered, by infecting his wife's lover with "some extremely virulent bovine tuberculosis germs", that tuberculosis was transmissible from animals to the human species.<sup>2</sup> Even though the decisive experiment was reckless and born of revenge – "respectable feelings of humanity and scientific morality" would have prohibited its performance – the result brought closure to heated debates ("at medical congresses and scientific academics") and solved questions concerning appropriate prophylactic measures.<sup>3</sup> Thus we might "disregard the private, egotistical driving force

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<sup>1</sup> Santiago Ramón y Cajal, "For a Secret Offense, Secret Revenge", in *Vacation Stories: Five Science Fiction Tales*, L. Otis, trans. (Chicago: Univ. Illinois Press, 2001), 1.

<sup>2</sup> *Ibid.*, at 11–13.

<sup>3</sup> *Ibid.*, at 11.



that moves the investigative spirit and focus exclusively on the social impact of each discovery. . . .”<sup>4</sup>

Cajal’s satirical distinction, indeed *disconnect*, between the genesis and the explanatory power of scientific knowledge reappears nowadays in various public policy contexts. President Bush’s newly-appointed advisory council on bio-ethics is to address existing ethical limitations on stem-cell research (e.g., should research be limited to existing cell lines *even if* morality impedes the progress of medical knowledge?);<sup>5</sup> elsewhere, should the U.S. government attempt to remedy the greed (i.e., *not* altruism) that drove the genome project by disallowing conventional patents on genetic discoveries, or will that discourage investment in research?<sup>6</sup> Both lines of inquiry pre-suppose a framework wherein science is often affected, but never constituted, by morality, funding, and opportunism. In the context of litigation involving scientific experts, my focus in this article, the distinction between genealogy and principled testimony mirrors the traditional distinction between the context of discovery and the context of justification. Anything – vanity, envy, bizarre dreams, religious beliefs – might lead to scientific discovery, but the marker of scientific validity is its methodology. In this contemporary version of the discovery/justification distinction, the social and rhetorical aspects of science are readily acknowledged but then domesticated or neutralized as ornamental.<sup>7</sup> Of course science is institutional and professionalized by training, credentialing, and gatekeeping mechanisms; of course scientists build reputations, employ a specialized discourse, use metaphors, persuade, and reach consensus; of course science is limited by dominant theoretical paradigms and the evolution of technology; and of course science involves values, and economic and political interests – but these are not, in modern scientific accounts, science itself. At the core of science are the data to be collected and tested to reach tentative conclusions, tentative because science never produces certainty or truth – its hallmarks are criticism and revision. *That* image of science was adopted, indeed officialized, by the U.S. Supreme Court in

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<sup>4</sup> *Ibid.*, at 8 (“Oh, what supreme inventions, what powerful forces for progress are imbecilic pride and the vain desire for glory!”).

<sup>5</sup> See R. Southwick, “President Bush Names Members of New Bioethics Panel”, *Chronicle of Higher Education*, January 25, 2002, A20.

<sup>6</sup> See M. Stern, “Raider of the Lost Genome”, *The American Lawyer*, February 2001, 77–78.

<sup>7</sup> D. Caudill, “Barely Opening, then Slamming Shut, Science’s ‘Black Box’ in Law: A Response to Beecher-Monas’ *Heuristics*”, *Cardozo Law Review* 23 (2002), 1795–1810.

*Daubert v. Merrell Dow Pharmaceuticals*,<sup>8</sup> and it dominates current legal discourse on law/science relations.<sup>9</sup>

Joseph Rouse identifies the foregoing account as “the standard view”:

[S]cientific “communities” share fundamental presuppositions (vocabulary, theoretical models, values and norms, and so forth) which are inculcated in their members’ professional training and which are enforced by the standard gatekeeping procedures of a discipline. . . . [T]hese basic values and theoretical commitments . . . [enable] research to progress coherently . . . [even though the] fundamental commitments of the community change over time. . . . [T]his approach has the . . . advantage of minimizing and externalizing the social dimensions of scientific knowledge: what matters epistemically are individual cognitive states, and the particular social practices through which scientists come to share those states can be safely left to sociologists.<sup>10</sup>

*Safely* is the key, since the sociology of scientific knowledge threatens to demonstrate that the supposed “core” – hypothesis, data, test, conclusion – is only the surface, that science is *social to the core*, and that scientific knowledge is a rhetorical achievement, a contestable narrative, a negotiated consensus, and so forth. In its strongest formulation, the sociology of science replaces nature with society as the *reference*; the “hard case” was always to show how the facts of nature were constructed to satisfy social, perhaps political and economic, interests.<sup>11</sup> Given, however, (i) a naturalist *turn* in science studies – despite accusations of “closet realist” and “harmless radical”, many theorists nowadays grant a role for nature (or at least its representational models)<sup>12</sup> – and (ii) the corresponding concessions (on the part of those who idealize science) that science is uncertain, probabilistic, and model-based, *and* that institutional and rhetorical practices play a role, the hard case nowadays is to show that social and rhetorical practices are co-productive, constitutive, and inevitable, rather than ornamental, contingent, and in the end eliminable by methodological rigor.

<sup>8</sup> 509 U.S. 579 (1993) (science is uncertain; four-part test for scientific validity includes consideration of testability, low error rate, peer-reviewed publications, and general acceptance).

<sup>9</sup> See, e.g., E. Beecher-Monas, “The Heuristics of Intellectual Due Process: A Primer for Triers of Science”, *New York University Law Review* 75 (2000), 1563–1657 (components of heuristic include hypothesis, data, inferences, methodology, and probable conclusion).

<sup>10</sup> J. Rouse, *Engaging Science: How to Understand Its Practices Philosophically* (Ithaca, NY: Cornell University Press, 1996), 168.

<sup>11</sup> See J. Potter, *Representing Reality: Discourse, Rhetoric and Social Construction* (London: Sage Publications, 1996), 17 (“science becomes the ‘hard case’ against which to test an argument about the constructed nature of facts”).

<sup>12</sup> See T. Lenoir, “Was the Last Turn the Right Turn?”, in M. Biagioli, ed., *The Science Studies Reader* (New York: Routledge, 1999), 291; S. Fuller, “Why Science Studies Has Never Been Critical of Science: Some Recent Lessons on How to be a Helpful Nuisance and a Harmless Radical”, *Philosophy of the Social Sciences* 30 (2000), 5–32.

Bruno Latour has famously argued that science is simultaneously natural, social (“collective”), and narrative and, therefore, cannot be reduced to any one of them.<sup>13</sup> Similarly, Donna Haraway identifies four competing accounts of science – social constructivist, political reductionist, cultural criticism, and scientist’s own internal accounts – as four *temptations*,<sup>14</sup> “each valid up to a point, but dangerous if allowed to silence other perspectives.”<sup>15</sup> In the context of litigation involving expert scientific testimony, the temptation to rely on scientists’ internal accounts is particularly strong, since scientific evidence is brought into court to stabilize a social conflict, a contested narrative, a rhetorical enterprise. The current juridical discourse of law/science relations will simply not allow science to be characterized by the same instabilities that characterize law. The “standard” view of science, with all of its defense mechanisms, is therefore imported into law: (i) when greed or ambition are identified, they are placed in the *context of discovery*; (ii) when funding (or gender or racial) bias, political interests, or cultural values are identified, they are externalized as *contingent factors*; (iii) when fraud or mistakes are identified, they are accounted for as *eliminable social constructions*; and finally, (iv) when institutional gatekeeping, dominant theories, evolving measurement technologies, experimental conventions, negotiation and consensus-building techniques, and discursive regimes are identified, they are viewed as neutral frameworks at worst, and at best as highly supportive of the core activities of scientists – theorizing, collecting data, testing, and reaching conclusions.

In the remainder of this article, I (i) explore Lacan’s remarks throughout his career concerning science, (ii) draw parallels between Lacan’s views and the various contemporary challenges to scientism that roughly constitute “science studies”, and (iii) suggest that the potential *practical* insights of science studies for law are enhanced or enriched by appropriating Lacanian psychoanalytic theory. Each of these steps in my analysis, however, requires qualification to avoid misunderstandings as I proceed. First, Lacan’s reflections on science are rarely systematic, and any coherent “Lacanian” philosophy of science must be constructed on the basis of not only scattered references to science but also Lacan’s entire psychoanalytic

<sup>13</sup> B. Latour, *We Have Never Been Modern*, C. Porter, trans. (Cambridge, MA: Harvard University Press, 1993), 6.

<sup>14</sup> D. Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (New York: Routledge, 1989).

<sup>15</sup> M.M.J. Fischer, “Eye(I)ing the Sciences and Their Signifiers (Language, Tropes, Autobiographers): InterViewing for a Cultural Studies of Science and Technology”, in G. Marcus, ed., *Technoscientific Imaginaries: Conversations, Profiles, and Memoirs* (Chicago: University of Chicago Press, 1995), 59.

project – science is important, for example, as a means to understand Freud’s ambitions, as a powerful discourse that affects everyone and therefore the analysand, as a standard for psychoanalysis to meet to gain credibility, and as an object of psychoanalytic scrutiny and critique. Moreover, Lacan’s theoretical framework, including his reflections on science, develop over decades. Thus, it is not unusual for commentators to identify stages in Lacan’s thought that problematize the effort to summarize, for example, Lacan’s *view* of science – that view changes, some would say radically, from the early to the late years of the Paris “Seminar”.<sup>16</sup> Finally, and not surprisingly, Lacan’s work is subject to various interpretations – just as there are numerous “Wittgensteins”,<sup>17</sup> commentators disagree with regularity over the details of Lacanian psychoanalytic theory.<sup>18</sup> In my own exposition below concerning Lacan and science, I do not intend to revolutionize current understandings among students of Lacan, but rather to collect in one place a set of Lacan’s aphorisms to capture a general perspective on science. In so doing, while I am in agreement with commentators who emphasize stages in the development of Lacanian theory, I tend to see numerous consistencies alongside significant refinements, rather than complete reversals, in that development, especially with respect to science generally (and not, for example, with respect to clinical practice).

Second, while I am anxious to demonstrate the relevance of Lacan for contemporary discourse in science studies, I recognize the initial gulf between the systematic and disciplinary study of scientific theory and prac-

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<sup>16</sup> Paul Verhaeghe, for example, argues that the early Lacan is deterministic “in a scientific way, . . . interpreting [the] dark unconscious as a linguistic system, governed by laws and thus predictable”, while the later Lacan makes “room for unpredictability and causality as such.” P. Verhaeghe, “Causality in Science and Psychoanalysis”, in J. Glynos and Y. Stavrakis, eds., *Lacan and Science* (London: Karnac, 2002), 126. In the early period, “Lacan had high hopes” that “psychoanalysis would join the hard sciences”, *ibid.*, at 129, but science and psychoanalysis are later distinguished as two different symbolic systems – the goal of science is “suturage” of the split subject, while the goal of psychoanalysis is “creation of a neo-subject”. *Ibid.*, at 134. On the other hand, David Corfield highlights Lacan’s “persistent belief in the relevance of mathematics to the human sciences”, and from the early seminars forward “the drive to mathematize [or “formalize”] remains and if anything strengthens”. See D. Corfield, “From Mathematics to Psychology: Lacan’s Missed Encounters”, in *Lacan and Science, supra*, at 182.

<sup>17</sup> “Wittgenstein can be what we want him to be.” D. Edmonds and J. Eidenow, *Wittgenstein’s Poker* (New York: Harper Collins, 2001), 23 (referring to Marjorie Perloff’s identification of numerous myth-creating novels, plays, books of poetry, artworks, and performance pieces about Wittgenstein’s life).

<sup>18</sup> See, e.g., S. Helmling, “Jameson’s Lacan”, [http://muse.jhu.edu/journals/postmodern\\_culture/v007/7.1helmling.html](http://muse.jhu.edu/journals/postmodern_culture/v007/7.1helmling.html) [*Postmodern Culture* 7/1 (1996)].

tice, on the one hand, and Lacan's neo-Freudian psychoanalytic project, on the other, as well as their respective unique histories, literary traditions, and objects of inquiry. While that gulf might seem to be significantly narrower due to (i) the close link between science studies (associated with relativism and historicism) and what Žižek calls "post modernist-deconstructionist Cultural Studies",<sup>19</sup> and (ii) the corresponding popularity of Lacan's theories of the (absent) subject and of (determinative) language in Cultural Studies, I agree with Žižek that with respect to science,

Lacan parts with the Cultural Studies historicism: for him, modern science is resolutely NOT one of the "narratives" in principle comparable to other modes of "cognitive mapping"—modern science *touches the real* in a way totally absent in premodern discourses.<sup>20</sup>

Notwithstanding that distinction, science studies is not a unified movement but rather a disciplinary enterprise full of disagreements – that is why I characterize it as a discourse for which Lacan's reflections on science prove helpful. Commentators on Lacan have already noticed that the psychoanalytic project has obvious parallels in science studies. For example, Lacan's characterization of science as an "attempt to exclude the subject"<sup>21</sup> finds support in many recent studies in the history and philosophy of science,

which have in common [an] attempt to highlight the importance of the individual-subjective experiences of the scientists . . . themselves within particular socio-historical contexts.<sup>22</sup>

Similarly, the methodology of conversation analysis so popular in science studies is, for David Corfield, "reminiscent of" Lacan, perhaps "a sign that . . . social psychology . . . is moving towards Lacan's outlook".<sup>23</sup> None of this is to suggest that Lacan's views are already represented in science studies by others, but rather to highlight an opportunity for Lacanian psychoanalytic theorists to engage science studies.<sup>24</sup>

<sup>19</sup> See Slavoj Žižek, "Lacan between Cultural Studies and Cognitivism", in *Lacan and Science*, *supra* n. 16, at 291.

<sup>20</sup> *Ibid.*, at 298.

<sup>21</sup> See J. Glynnos, "Psychoanalysis Operates upon the Subject of Science: Lacan between Science and Ethics", in *Lacan and Science*, *supra* n. 16, at 66 ("modern science, according to Lacan, actively forgets the subjective drama of its practitioners").

<sup>22</sup> *Ibid.*, at 63.

<sup>23</sup> See Corfield, *supra* n. 16, at 195 (discussing Harvey Sacks' work on conversation analysis).

<sup>24</sup> For example, Trish Glazebrook's *Heidegger's Philosophy of Science* (New York: Fordham University Press, 2000) relies repeatedly on parallels with Kuhn's paradigm theory in her exposition of Heidegger; she is not, of course, suggesting that Heidegger's

Third, and finally, even when it is clear that Lacan's reflections on science are useful in science studies, it is also clear that the discourse in law concerning science is particularly resistant to critiques of science, primarily because of law's reliance on science for stability. Again, the gulf between law's conventional idealization of science and social constructivist critiques of scientism appears to render science studies superfluous.<sup>25</sup> On closer inspection, however, the naturalist turn in science studies frustrates the attempt to dismiss science studies as stereotypically irrelevant to a legal system dependent upon science, and that dependence can itself be seen as contingent – some judges, in their gatekeeping role, hold modest assessments of science and consequently resist mainstream idealizations of the scientific enterprise. Some space is thereby created for critical reassessments of science in law, including psycho-analytically inspired approaches to the extent that they offer compelling alternatives within the field of science studies.

#### LACAN, SCIENCE, AND ETHNOLOGY

[S]cience, if one looks at it closely, has no memory. Once constituted, it forgets the circuitous path by which it came into existence.<sup>26</sup>

Jacques Lacan's occasional remarks concerning science are particularly timely for the contemporary discourse of law/science relations, not only because Lacan's theory of the registers (imaginary, symbolic, real) is a critique of reductionism, but because Lacan's psychoanalytic method is not reducible to an individualistic clinical pathology. Beyond Freud's own extension of psychoanalysis to explain social phenomenon, Lacan's subject is constituted in a web of identificatory relations with others and a network of highly determinative signifiers, i.e., in the *imaginary* and in the *symbolic order* of language. Indeed, scientific discourse in many ways constitutes the subject: (i) "the subject . . . loses his meaning in the objectification of discourse [–] the most profound alienation of the

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philosophy is reducible to, or the same as, Kuhn's views, but is instead relying on the popularity of Kuhn to connect with her readers *and* to show that Heidegger's views are important for contemporary projects in the philosophy of science.

<sup>25</sup> There is little awareness of, and certainly no concession to, social constructivism in judicial decisions concerning scientific expertise. See G. Edmond and D. Mercer, "Representing the Sociology of Scientific Knowledge and Law", *Science Communication* 19 (1998), 307.

<sup>26</sup> J. Lacan, "Science and Truth", B. Fink, trans., *Newsletter of the Freudian Field* 3/1–2 (1989), 17.

subject in our scientific civilization”;<sup>27</sup> (ii) the instruments engendered by scientific discourse have become “the elements of your existence”;<sup>28</sup> (iii) the fact that “everyone finds himself at the same level as the scientist”, as far as ignorance of “the effects of science in the world today” is concerned, “justifies us speaking of a subject of science” as the modern analysand.<sup>29</sup> Lacan’s term “the subject of science” not only implies that, given science’s dominant position in contemporary culture,<sup>30</sup> we are all (scientist and non-scientist alike) subject to its power, but also that the so-called split subject (in psychoanalytic theory, everyone nowadays is a split subject) originated alongside modern science, roughly in the seventeenth century. Because Lacan (influenced by Alexandre Koyre’s account of the scientific revolution<sup>31</sup>) identifies Descartes (1596–1650) as making the “inaugural step” toward modern science, Lacan refers often to the “Cartesian Subject” and the “subject of Cartesian origin”.<sup>32</sup> Descartes’ famous quest for certainty and his method of doubt result in a division, between knowledge and truth, that Lacan views as paradigmatic of the modern subject.<sup>33</sup> While the “split subject” in psychoanalytic theory typically refers to the division between the analysand’s conscious “knowledge” and unconscious “truth”,

<sup>27</sup> J. Lacan, “The Function and Field of Speech and Language in Psychoanalysis”, in *Écrits: A Selection*, A. Sheridan, trans. (New York: W.W. Norton & Co., 1977), 70.

<sup>28</sup> J. Lacan, *On Feminine Sexuality, The Limits of Love and Knowledge 1972–1973 (Book XX of The Seminar of Jacques Lacan: Encore 1972–1973)*, B. Fink, trans. (New York: W.W. Norton & Co. 1998), 82.

<sup>29</sup> J. Lacan, “The Subversion of the Subject and the Dialectic of Desire in the Freudian Unconscious”, in *Écrits*, *supra* n. 27, at 292–293. Scientific subjectivity means “that which the scientist at work in science shares with the man of the civilization that supports it.” Jacques Lacan, “On a Question Preliminary to Any Possible Treatment of Psychosis”, in *Écrits*, *supra*, at 216. See also *supra* n. 26, at 7 (“the subject upon which we operate in psychoanalysis can only be the subject of science”).

<sup>30</sup> See M. Serres (with B. Latour), *Conversations on Science, Culture, and Time*, R. Lapidus, trans. (Ann Arbor: Univ. Michigan Press, 1995), 86–87 (“[s]cience finds itself in a dominant position. . . . Science has all the power, all the knowledge, all the rationality . . .”).

<sup>31</sup> *Supra* n. 21, at 52–55.

<sup>32</sup> J. Lacan, *The Four Fundamental Concepts of Psycho-Analysis*, A. Sheridan, trans. (New York: W.W. Norton & Co., 1977), 47 (“there is the subject, who . . . has been waiting there since Descartes. . . . [Psychoanalysis] was possible only . . . after the emergence of the Cartesian subject, in so far as modern science began only after Descartes . . .”). See also D. Nobus, “A Matter of Cause: Reflections on Lacan’s ‘Science and Truth’”, in *Lacan and Science*, *supra* n. 16, at 93, quoting Alexandre Koyre, *Du Monde Clos à l’Univers Infini*, R. Tarr, trans. (Paris: Presses Universitaires de France, 1962). (“Lacan . . . supported Koyre’s conviction that ‘it was Descartes (and not Bruno or Galilei) who formulated clearly and distinctively the principles of the new science.’”)

<sup>33</sup> See Lacan, *supra* n. 32, at 221–227; see also *supra* n. 26, at 5 (referring to “the experienced division of the subject as a division between knowledge and truth”), 12 (referring to “the subject’s division between truth and knowledge”).

it can also refer to the division between the symbolic and the real for the subject, and therefore to the division between uncertain knowledge and guaranteed knowledge (or truth) for Descartes. Just as Descartes needed a non-deceitful God to guarantee his knowledge, the modern “subject of science” needs, and finds in modern science, a supposed means to *suture* the split between knowledge and truth.<sup>34</sup> In other words, “modern science has endeavored to solve the issue of truth by advancing it as the inherent quality of proper scientific knowledge.”<sup>35</sup>

Consequently, the

subject of science which emerges with Descartes is, at the same time that it emerges, rejected by the discourse of science. He is simultaneously one of its conditions, but is . . . rejected to the exterior, which means that science presents itself as a discourse without a subject, as an impersonal discourse.<sup>36</sup>

Paradoxically (because psychoanalysis is associated with engagement of an irrational unconscious, not rational thought), the subject of psychoanalysis “can only be the subject of science”.<sup>37</sup> In this account, Lacan ends up critical of science as a reductionist narrative – a powerful (insofar as it constructs subjects) yet unreflective (insofar as it denies subjectivity) enterprise based on fictions revealed under psychoanalytic scrutiny.

Lacan’s account of science is nevertheless ambivalent – even as Lacan highlights the limitations and reductionism of scientific inquiry, he acknowledges the emergence of psychoanalysis from scientific discourse,<sup>38</sup> confirming that Freud’s own scientism paved the way.<sup>39</sup> Moreover, Lacan argued for a certain scientific status for psychoanalysis, especially in his attempts at formalization and mathematization of analytical categories,<sup>40</sup> although most commentators agree that Lacan’s

<sup>34</sup> See Lacan, *supra* n. 32, at 225 (referring to Descartes’ solution as an “extraordinary” sleight of hand as an elegant solution); *supra* n. 26, at 10 (“science turns out to be defined by the deadlocked endeavor to suture the subject”).

<sup>35</sup> Nobus, *supra* n. 32, at 98.

<sup>36</sup> See Jacques-Alain Miller, “Elements of epistemology”, in *Lacan and Science*, *supra* n. 16, at 161.

<sup>37</sup> See *supra* n. 26, at 7 (“to say that the subject upon which we operate in psychoanalysis can only be the subject of science may seem paradoxical”). See also *supra* n. 36, at 161 (“Lacan postulates, and this may appear to be paradoxical, that the subject of the Freudian unconscious, the subject which is ostensibly very different from a *cogito*, is the subject of science . . .”); Nobus, *supra* n. 32, at 95 (“Why paradoxical? For the simple reason that psychoanalysis is traditionally described as a discipline which concentrates on people’s irrational motives . . .”).

<sup>38</sup> *Supra* n. 28, at 86.

<sup>39</sup> *Supra* n. 26, at 6.

<sup>40</sup> *Supra* n. 27, at 72 (“this is the problem of the grounding that must assure our discipline its place among the sciences: a problem of formalization . . .”).

view of science changed in the mid-1960s. For example, in the earliest seminars Lacan is optimistic about the scientific status of psychoanalysis, which can be explained by his emphasis on the unconscious as a determinative linguistic system.<sup>41</sup> A shift in perspective, however, is apparent in Seminar XI (1964)<sup>42</sup> and in the opening lesson (“Science and Truth”<sup>43</sup>) of Seminar XIII (1965–1966), which has been variously characterized as a reversal (i.e., a rejection of determinism and of the hope that “psychoanalysis would join the hard sciences”),<sup>44</sup> or as a new awareness on Lacan’s part that it is science that will have to change to accommodate psychoanalysis (and not the other way around).<sup>45</sup> Notwithstanding that

<sup>41</sup> See, e.g., *supra* n. 27 [the 1953 “Rome Discourse”], at 56–77, which begins by raising the question of what it will take for “psychoanalysis [to] become a science (for it is not one yet)”, *ibid.*, 57, and then emphasizes that in analysis “the symptom is itself structured like a language”, *ibid.*, 59; that Freud’s discovery “was that of the field of the effects in the nature of man of his relations to the symbolic order”, *ibid.*, 64; that symbols “envelope the life of man in a network so total that they . . . bring . . . the shape of his destiny”, *ibid.*, 68; and that “linguistics can serve as a guide”, *ibid.*, 73, before concluding that “Psychoanalysis will provide scientific bases for its theory or for its technique only by formalizing in an adequate fashion the essential dimensions of its experience. . . .” *Ibid.*, 77. See also Corfield, *supra* n. 16, at 181–182: “It is clear from reading his papers of the 1950s that Lacan intended his version of Freudianism to be a science, one which took its lead from a vision of science as mathematicized rather than as experimental. . . . [Y]ou can sense his excitement that at last it was the turn of the human science, to allow for formalization.”

<sup>42</sup> Lacan, *supra* n. 32.

<sup>43</sup> *Supra* n. 26.

<sup>44</sup> Verhaeghe, *supra* n. 16, at 129 (“this hope can be found in the very same seminar where Lacan felt compelled to abandon it, i.e. Seminar XI, which does not make it any easier to read”). Verhaeghe chronicles the shift from an emphasis on *automaton* – the deterministic linguistic mechanisms of a chain of signifiers – to the idea of *tuche* – which in contrast to the “complete” determination by the symbolic, suggests unpredictability; Lacan elaborates *tuche* as the “point where the chain stalls, . . . the very point where the real makes its appearance. The ‘meeting’ with the real is an ever-missed meeting, because there is no appropriate signifier. . . . As a consequence, there is no final analysis possible, nor a definite computation of the subject.” *Ibid.*, 131; see Lacan, *supra* n. 32, at 53–64 (lecture entitled “Tuché and Automaton”). In consequence, psychoanalysis is no longer science, but is a symbolic system (alongside science) with a different goal – to confront and engage, rather than “suture”, the divided subject. Verhaeghe, *supra*, at 134.

<sup>45</sup> B. Fink, “Psychoanalysis on Science”, in B. Fink, ed., *The Lacanian Subject: Between Language and Jouissance* (Princeton: Princeton University Press, 1995), 140: “. . . Lacan’s view in the 1960s is that science will have to undergo some serious changes before psychoanalysis can be included within its scope. . . . [S]cience is not yet capable of encompassing psychoanalysis. Science must first come to grips with the specificity of the psychoanalytic object.” See Nobus, *supra* n. 32, at 109–110: “I tend to agree [that Lacan in ‘Science and Truth’ relieved psychoanalysis from the burden of the ideal of science] if only the term science is restricted to those modern disciplines which favor the quantitative experimental method and the hypothetico-deductive approach. For nowhere in ‘Science and Truth’ did

shift, which should not be exaggerated,<sup>46</sup> Lacan remained both a critic of overly-confident scientism and an ambassador for scientific progress. Psychoanalytic practice, when formalized, is in certain respects scientific, since like any science it aims at the *real*,<sup>47</sup> but psychoanalysis is also a distinct symbolic system, and in that sense competes with or offers an alternative to mainstream science;<sup>48</sup> moreover, just as science stands in judgement (over psychoanalysis) as a rigorous methodological standard to which Lacan in his early work aspired, Lacan “psychoanalyzes” science itself to reveal its shortcomings, including its forgetfulness and strategic

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Lacan intimate that a psychoanalytic praxis does not deserve to be qualified as scientific, if only the term ‘scientific’ is expanded . . . so that it encompasses all activities involving the systematic classification, detailed description and rational explanations of empirical data. . . .”

<sup>46</sup> Even Paul Verhaeghe, who draws a sharp distinction between the early “deterministic” Lacan and the later Lacan who emphasized unpredictability and causality as such, concedes that “it is the interaction between these two orders [*automaton* and *tuche*] that has to be studied. . . . [B]oth of them are intrinsically interwoven and determine each other in a mutual causality, which is circular but not complementary.” See Verhaeghe, *supra* n. 16, at 130–131.

<sup>47</sup> See Corfield, *supra* n. 16, at 180–181 (“science aims at the *Real* by means of mathematization”). The notion of the “Real” in Lacanian psychoanalytic theory is notoriously problematic, but refers in simplest terms to that which is neither *symbolic* nor *imaginary*, the other two orders or planes of experience or existence. Alan Sheridan highlights the evolution of the term Real in Lacan’s seminar initially as a “constancy” in the face of “symbolic substitutions and imaginary variations”, then as an impossibility or resistance “before which the imaginary faltered” and “over which the symbolic stumbles”, and finally as a description of “that which is lacking in the symbolic order, the ineliminable residue of all articulation, the foreclosed element, which may be approached, but never grasped. . . .” A. Sheridan, “Translator’s Note”, in Lacan, *supra* n. 32, at 280; see also Jacques Lacan, *Freud’s Papers on Technique 1953–1954 (Book I of the Seminar of Jacques Lacan)*, J. Forrester, trans. (New York: W.W. Norton & Co., 1988), 66 (“the real, or what is perceived as such, is what resists symbolization absolutely”). The complete resistance to symbolization in the early Lacan seems to be replaced by a level of approachability in the 1960s – Lacan refers to the “encounter with the real”, even though the “real eludes us.” Lacan, *supra* n. 32, at 53. Leaving aside the clinical implications of Lacanian theory, such aphorisms have led commentators to suggest (i) that Lacan’s *real* can be symbolized, which is what physics, mathematics, and even psychoanalysis do as they “aim at the Real”, see Corfield, *supra* n. 16 at 188 (“Lacan claimed that mathematicians symbolize the imaginary of the real”), and (ii) that “modern science *touches the real*”, see *supra* n. 19, at 298. Although there are similarities between such statements and representational/naturalist accounts of science such as Ronald Giere’s, the “real” is not synonymous with the natural reality that modern science purports to describe. See R. Giere, *Science Without Laws* (Chicago: University of Chicago Press, 1999), 240–241.

<sup>48</sup> Verhaeghe, *supra* n. 16, at 132 (“both science and psychoanalysis, being symbolic systems, can thus be understood as different answers to lack or loss in the subject”).

repressions.<sup>49</sup> This does not prevent Lacan from variously recommending the need for analysts to rely on biology and ethology, linguistics, and even geology.<sup>50</sup> At the same time, science is always for Lacan a symbolic system, alongside religious, juridical, and political systems.<sup>51</sup> This is not a simple anti-realism, even though the mediation of language is unavoidable, since Lacan does tie the exact sciences closely with that function of the *real* (which is not the same as “nature” or “reality”) that we commonly associate with reality: “something one always finds in the same place . . . whether or not we are there”.<sup>52</sup>

After all, can’t the progress of the system of the physical sciences be conceived as the progress of a single symbolic system, to which things give sustenance and substance?<sup>53</sup>

On the other hand, that “symbolic system is not like a piece of clothing which sticks on to things, [for] it is not lacking in its effects on them and on human life”.<sup>54</sup> In this passage, Lacan is referring to the effects of

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<sup>49</sup> See generally *supra* n. 21. “How then are we to make sense of Lacan’s appeals to mathematical formalization as a theoretical ideal for psychoanalysis? It is an aspiration that has created not inconsiderable confusions, leading many to assume that Lacan feels that psychoanalysis *is* a (mathematical) science. The picture, however, is a lot more complex, not to say paradoxical. For, on the one hand, Lacan argues that psychoanalysis can be made scientific while, on the other hand, he clearly resists subsuming it under science.” *Ibid.*, 51. Thus while “there were aspects of modern science (in terms of its systematic approach . . . and its inclination toward mathematical formalization) that he felt psychoanalysis could legitimately aspire to”, modern science is for Lacan “characterized by its tendency to exclude or ‘suture’ the subject.” *Ibid.*, 52. Psychoanalysis “brings the modern subject of science within its field and operates on it.” *Ibid.*

<sup>50</sup> See J. Lacan, *The Psychoses 1955–1956 (Book III of the Seminar of Jacques Lacan)*, R. Grigg, trans. (New York: W.W. Norton & Co., 1993), 165 (regarding images and the imagination, “it’s unquestionably from biologists and ethologists that we must expect any progress”); *supra* n. 27, at 73 (“linguistics can serve as a guide [for psychoanalysis], and we cannot possibly remain indifferent to it”); J. Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 74 (“you [analysts] wouldn’t believe what you owe to geology”).

<sup>51</sup> Lacan, *Freud’s Papers*, . . . *supra* n. 47, at 264.

<sup>52</sup> See J. Lacan, *The Ego in Freud’s Theory and in the Technique of Psychoanalysis 1954–1955 (Book II of the Seminar of Jacques Lacan)*, S. Tomaselli, trans. (New York: W.W. Norton & Co., 1988), 297. However, as Peter Canning argues, “by dealing exclusively with the real of ‘what always returns to the same place’, the real of (pre-topological) mathematics and logic, science forecloses that which makes itself possible, for its own condition is the subject that writes and speaks, that enunciates and forgets. . . .” See P. Canning, “Science Between the Subject and the Other”, (*a*): *A Journal of Culture and the Unconscious* 1/2 (2001), 113.

<sup>53</sup> Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 264.

<sup>54</sup> *Ibid.*, 265.

disturbing nature, like pollution,<sup>55</sup> but the effects of scientific discourse on civilization are, for Lacan, profound. Science “destitutes the subject . . . in our epoch”,<sup>56</sup> foreclosing not only religion<sup>57</sup> but any account of *truth* for the subject apart from scientific *knowledge* (truth and knowledge having been “sutured” in the Cartesian subject of modernity).<sup>58</sup> This leaves Lacanian psychoanalysis in the paradoxical position of being considered *unscientific*, because it rejects science’s “solution” to the search for certainty, while aspiring to scientific status (and wanting to avoid characterization as a religion<sup>59</sup>) on the basis of rigour and formalization, even as its object of inquiry is the “subject of science” produced by a scientific discourse that forgets, denies, or misses subjectivity. Because psychoanalysis “operates on” the subject of science,<sup>60</sup> Lacan explicates in detail the clinical implications of the discourse of science, but along the way Lacan reflects on how that discourse affects scientists and thus defines science itself.

Lacan early in his Seminar calls into question the ideals of observation and experiment in the exact sciences.

The whole of science is based on reducing the subject to an eye, [which requires that we] put ourselves in the shoes of the scientist who can decree that he is just an eye, and can put a notice on the door – *Do not disturb the experimenter*.<sup>61</sup>

For the early Lacan, “everything depends on the position of the subject”, which “is essentially characterized by its place in the symbolic world. . . .”<sup>62</sup> Thus “when we try to scientificate, . . . to bring order to . . . phenomena, . . . in the end it is always the paths of the symbolic function which lead us, much more than any sort of direct apprehension”.<sup>63</sup>

<sup>55</sup> *Ibid.* (“we see things being disturbed, decomposing, dissolving under [the symbolic system’s] pressure. . . . You can call this upheaval what you will – conquest, rape of nature . . .”).

<sup>56</sup> See J. Lacan, “Proposition of 9 October 1967 on the Psychoanalyst of the School”, R. Grigg, trans., *Analysis* 6 (1995), 8.

<sup>57</sup> “[H]eavens, the creation, were not at all mute before the advent of science. On the contrary, . . . the earth sang the glory of God. . . . It is precisely the discourse of science . . . that makes the world become silent.” *Supra* n. 36, at 155.

<sup>58</sup> See generally *supra* n. 26, at 10 (“science turns out to be defined by the deadlocked endeavor to suture the subject”), 18 (science “forgets the dimension of truth that psychoanalysis seriously puts to work”).

<sup>59</sup> Lacan, *supra* n. 32, at 265: “If measured against science understood [as the Cartesian departure], psycho-analysis might be reduced to the rank of . . . a religion. But psycho-analysis is not a religion. It proceeds from the same status of science *itself*.”

<sup>60</sup> *Supra* n. 26, at 7.

<sup>61</sup> Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 80.

<sup>62</sup> *Ibid.*

<sup>63</sup> Lacan, *supra* n. 52, at 31.

Indeed, even late in his career, Lacan saw scientific progress as an achievement in the symbolic order, not an unmediated experience of the natural world,

because even in scientific discourse it is clear that there isn't the slightest world. As soon as you add something called a "quark" to atoms and have that become the true thread of scientific discourse, you must realize that we are dealing with something other than a world.<sup>64</sup>

In another (earlier) formulation, all

scientific progress consists in making the object as such fade away. In physics, for instance, the further you advance, the less you grasp the object. What pertains to the order of perception interests physicists only at the level of exchanges of energy, atoms, molecules, which only produce the perceptible appearance in a contingent and transitory way.<sup>65</sup>

Physics is characterized not by "realities" but by "proper language", just as Newtonian theory "cannot be considered as anything more than a well-made language, than a syntax".<sup>66</sup> All of the sciences tend toward "the well-made language" (*langue bien faite*), but it is a "language deprived of all reference to a voice".<sup>67</sup> The point is not that there *is* no subjectivity – the scientist is a subject – but that the effect of scientific discourse is to "reduce everything to a determinate play of symbols encompassing all the interactions between objects."<sup>68</sup> The subjective dimension of science is limited to "the plane of consciousness", where the subject is but "the reflection, the mirror, the support of the objectal world".<sup>69</sup> In Lacan's early teaching, he observed that in the experimental domain, we forget that scientific knowledge is "only a crystallization of the symbolic activity", and we assume that "what science constitutes by the intervention of the symbolic function has always been there, that it is given".<sup>70</sup> Much later (in Seminar XI), Lacan would say that we forget that the objects of science change as science develops:

We cannot say that the object of modern physics is the same now as . . . in the seventeenth century. And is the object of modern chemistry the same at . . . the time of Lavoisier?<sup>71</sup>

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<sup>64</sup> *Supra* n. 28, at 56.

<sup>65</sup> Lacan, *supra* n. 52, at 104–105.

<sup>66</sup> *Ibid.*, 239.

<sup>67</sup> Lacan, *Freud's Papers . . .*, *supra* n. 47, at 265.

<sup>68</sup> *Supra* n. 47, at 194: "One might say that the ideal of science is to reduce the object to what can be closed and fastened within a system of interacting forces."

<sup>69</sup> Lacan, *Freud's papers . . .*, *supra* n. 47, at 194.

<sup>70</sup> Lacan, *supra* n. 52, at 17.

<sup>71</sup> Lacan, *supra* n. 32, at 8.

Most importantly for Lacan, the forgetful discourse of science “misrecognizes the unconscious”,<sup>72</sup> the dimension of the subject that psychoanalysis restores.<sup>73</sup> Of course, the “unconscious” should be understood here in terms of language, of a symbolic order that “evinces knowledge that, for the most part, escapes the speaking being”.<sup>74</sup> Science, misrecognizing language as communication, attempts to describe objective reality, but in the process constructs a fantasy concerning the subject. Psychoanalysis, on the other hand, uses formalization and language, in awareness of their limitations (or fictional status), to approach the *real* of a subject. Leaving aside clinical techniques and implications, the picture of science (physics *or* psychoanalysis) that emerges is a project to use the symbolic to approach the real, fully recognizing that the symbolic is in large part outside the analyst’s/scientist’s control and even consciousness, that the symbolic is therefore the object of inquiry as much as the real, that the symbolic is our only access to the real,<sup>75</sup> and that the real is never quite captured but is approximated by formalization.

Even the social sciences, where the object is certainly a subject, are prejudiced toward “abstract objectification of our experience on fictitious, even simulated, principles of the experimental method. . . .”<sup>76</sup> And yet Lacan, throughout his seminars, held on to the notion that psychoanalysis could be viewed as a scientific enterprise (even if it is science, and not psychoanalysis, that must change).<sup>77</sup> In a series of moves based on his critique of the reductionism in mainstream scientific discourse, Lacan reconfigured the discourse of science. First, Lacan rejected the “demand that every science should refer to a unitary, or world, system” – “we can dispense with the implicit transcendent element in the positions of

<sup>72</sup> *Supra* n. 28, at 139.

<sup>73</sup> Lacan, *Freud’s Papers* . . . , *supra* n. 47, at 194.

<sup>74</sup> *Supra* n. 28, at 139; *see also* J. Lacan, “Psychanalyse et médecine”, in *Lettres de l’Ecole freudienne* 1 (1967), 45, translated in Nobus, *supra* n. 32, at 103 (unconscious as “language which escapes the subject in its structures and effects”).

<sup>75</sup> *See* Verhaeghe, *supra* n. 16, at 135: “Signifiers determine the symbolic reality in which we live. They do not only contain the knowledge about our world, they *are* our world. The symbolic apparatus – be it a private phantasm or a scientific theory – is our royal road to the real.”

<sup>76</sup> *Supra* n. 27, at 72; *see* Lacan, *Freud’s Papers*, . . . *supra* n. 47, at 94 (“certainly one can always consider an organized being as an object, but . . . one retains, if only implicitly, the idea that it is a subject”).

<sup>77</sup> *See supra* n. 27, at 57 (“If psychoanalysis can become a science (for it is not yet one) . . . we must rediscover the sense of its experience”); 72 (“[I]t is with the handicap of being half a century behind the movement of the sciences, like medicine itself, that we are seeking to join up with them again”).

the positivist, which always refers to some ultimate unity of all fields”.<sup>78</sup> Second, Lacan rejected the strong opposition between the “exact” and the “conjectural” sciences: both are achievements in the symbolic.

For exactitude is to be distinguished from truth, and conjecture does not exclude rigor. And even if experimental science derives its exactitude from mathematics, its relation to nature does not remain any less problematic. . . .

. . . [I]t is clear that our physics is simply a mental fabrication whose instrument is the mathematical symbol.<sup>79</sup>

Once “conjecture is subject to exact calculation (using probability) and exactness is merely grounded in a formalism . . .”, the opposition is no longer sustainable.<sup>80</sup> Third, formalization is not the marker of science – a “false science, just like a true science, may be expressed in formulae” – but it is an important dimension of science.<sup>81</sup> Fourth, and finally, there are scientific endeavors – sustained by scientific discourses – that come close to, and are of use to, psychoanalytic methodology, namely anthropology and linguistics to the extent that studies of cultures trace the structures of the symbolic order.<sup>82</sup> Lacan’s example is usually Claude Lévi-Strauss, whose work,

in suggesting the implication of the structures of language with that part of the social laws that regulate marriage ties and kinship, is already conquering the very terrain in which Freud situates the unconscious.<sup>83</sup>

Lacan even suggests that ethnography – “by deciphering myths according to the synchrony of mythemes” – is “on a line parallel to” psycho-

<sup>78</sup> Lacan, *supra* n. 32, at 8.

<sup>79</sup> *Supra* n. 27, at 74. Lacan would later concede that physics, “the actual science we clearly possess”, is a discourse that concerns the real. *Supra* n. 28, at 105.

<sup>80</sup> *Supra* n. 26, at 11.

<sup>81</sup> See Lacan, *supra* n. 32, at 10. See also *supra* n. 21, at 67: “Given the ever-changing content of unconscious formations, including symptoms, . . . formalization . . . offers up the possibility of a much more stable theoretical reference – a reference to an underlying structure, along with its promise of rigour and transmissibility.”

<sup>82</sup> See *supra* n. 27, at 73. “Lévi-Strauss demonstrates that there is a correct classification of what the elementary structures of kinship make available to us. This presupposes that the symbolic agencies function in the society from the start. . . . But this is nothing more nor less than what is presupposed by the unconscious such as we discover and manipulate it in analysis.” Lacan, *supra* n. 52, at 30, referring to Claude Lévi-Strauss, *The Elementary Structures of Kinship*, J.H. Bell, J.R. von Sturmer and R. Needham, trans. (Boston: Beacon Press, 1969).

<sup>83</sup> *Supra* n. 27, at 73. See C. Lévi-Strauss, *The Raw and the Cooked: Mythologiques*, Vol. 1, J. and D. Weightman, trans. (Chicago: University of Chicago Press, 1983), 11–12 (“myths operate in men’s minds without their being aware of the fact . . . as if the thinking process were taking place in the myths”); see also Nobus, *supra* n. 32, at 102 (“the grammar of kinship and myths constitutes the very fabric of the human mind”).

analysis.<sup>84</sup> Ethnomethodology, the use of *informants* to gather material for anthropological scrutiny, is nevertheless limited by its interest in the “subject of science”, the objectified plane of consciousness.

... Lévi-Strauss would have reservations about the introduction, during the collection of documents, of a psychoanalytically inspired approach, with all that would entail by way of transference relationships.<sup>85</sup>

The human sciences, for Lacan, should become the “sciences of subjectivity”.<sup>86</sup>

#### THE GEOGRAPHY OF [POSITIONS WITHIN] SCIENCE STUDIES

Positioning Lacanian theory, or at least Lacan’s remarks on science, within the decades-long debates (in the history, philosophy, sociology, and now cultural studies of science) over how best to characterize science is problematic, even risky (given recurring accusations that cursory interest in Lacan leads to gross misrepresentations and banal reductions).<sup>87</sup> Lacan’s theories of the subject, the three registers, and the four discourses are so complex as to make the scientific enterprise a mere sideshow, but for (i) his persistent references to the subject of science (as *the* modern subject) and the discourse of science (as *the* modern discourse), and (ii) his career-long interest in the demarcation problem with respect to the scientific grounding and status of psychoanalysis. The seminars therefore bear out an interpretation that Lacan was anti-positivist and anti-realist (with respect to the conventional sense of “realism”), attentive both to formalization/mathematization and to probability/indeterminacy as central to scientific knowledge.<sup>88</sup> On the other hand, Lacan has been criticized

<sup>84</sup> *Supra* n. 27, at 73.

<sup>85</sup> *Supra* n. 26, at 11.

<sup>86</sup> *Supra* n. 27, at 73. This is not the same critique of ethnography discussed by Legendre: “Only under the guise of ethnography and so as to assure the west that reputedly savage societies were indeed inferior, did our objective and persecuting sciences dissect the strangely physical souls of shamans, of acrobats and of Hindu dancers.” See P. Legendre, “The Dance of Law”, in P. Goodrich, ed., *Law and the Unconscious: A Legendre Reader* (London: Macmillan Press, 1997), 43. We cannot “escape the questioning of our cultural presuppositions.” Legendre, “The Masters of Law: A Study of the Dogmatic Function”, in *Law and the Unconscious, supra*, at 114. Contemporary ethnographers therefore attempt to avoid “a closed set of analytic categories.” See P. Atkinson and M. Hammersly, “Ethnography and Participant Observation”, in N. Denzin and Y. Lincoln, eds., *Strategies of Qualitative Inquiry* (London: Sage Publications, 1998), 110–111.

<sup>87</sup> See, e.g., B. Fink, “Preface”, in *supra* n. 28, at vii.

<sup>88</sup> See “Editorial”, *Newsletter of the Freudian Field* 3/1–2 (1989), 1–3.

as inattentive to “authentic formalization” and to modern physics.<sup>89</sup> In any event, if one views the demise of positivism in science studies (not among scientists or in popular culture) as a series of *turns* – variously identified as the turn to theory (Kuhn’s “move from continuity and verity . . . to discontinuity and relativity”),<sup>90</sup> the social turn,<sup>91</sup> the linguistic or semiotic turn,<sup>92</sup> the naturalist turn,<sup>93</sup> and the turn to science as experiment or practice<sup>94</sup> – Lacan’s interest in anthropology and ethnography is strikingly contemporary. While that parallel is not in itself particularly useful – science studies *turned* without Lacan’s insights – Lacan brings something new to the table with his psychoanalytic orientation. Every turn in science studies has been a return to subjectivity, but to the extent that the unconscious is not acknowledged, we only return to the subject of science – the modern analysis.

The initial turn to theory, credited to Kuhn, was a challenge to the view that “experiments unambiguously adjudicate among theories”;<sup>95</sup> Kuhn appealed to psychological and social factors, suggested that theories precede observations, and implied that faith-like or ideological commitments ground theories.<sup>96</sup> Lacan, in the ten years before Kuhn’s *The Structure of Scientific Revolutions* (1962), had already taken that turn: (i) science is a socio-psychological symbolic system, like religion or law or politics; (ii) apprehension depends on the position of the subject; and (iii) science involves articles of faith that constitute the experimental tradition.<sup>97</sup> There was an element of the unconscious in Kuhn’s work, since it suggested

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<sup>89</sup> See, e.g., Mikkel Borch-Jacobsen, *Lacan: The Absolute Master*, D. Brick, trans. (Stanford, CA: Stanford University Press, 1991), 162; Drucilla Cornell, “Rethinking the Beyond of the Real”, *Cardozo Law Review* 16 (1995), 784.

<sup>90</sup> Hans-Jörg Rheinberger, “Experimental Systems, Graphematic Spaces”, in T. Lenoir, ed., *Inscribing Science: Scientific Texts and the Materiality of Communication* (Stanford, CA: Stanford University Press, 1998), 285.

<sup>91</sup> B. Latour, “One More Turn After the Social Turn”, in *The Science Studies Reader*, *supra* n. 12, at 276–288.

<sup>92</sup> Lenoir, *supra* n. 12, at 290–299.

<sup>93</sup> W. Callebaut, ed., *Taking the Naturalist Turn, or How Real Philosophy of Science is Done* (Chicago: University of Chicago Press, 1993).

<sup>94</sup> *Supra* n. 90; Lenoir, *supra* n. 12, at 291; J. Rouse, “Understanding Scientific Practices: Cultural Studies of Science as a Philosophical Program”, in *The Science Studies Reader*, *supra* n. 12, at 442–456.

<sup>95</sup> P. Galison, *How Experiments End* (Chicago: University of Chicago Press, 1987), 7.

<sup>96</sup> See T. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).

<sup>97</sup> See Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 80, 264; Lacan, *The Psychoses*, *supra* n. 50, at 65.

that scientists *believe* the linear histories of their respective fields, and they do not *think* they are trapped in a paradigm, but a scientific theory, as the determinative factor or unit of achievement, is well-known to the scientist. The turn to social interests – accounting for scientific progress, for example, in terms of institutional, political, or economic interests – is appreciated nowadays for its disclosure of hidden causes, but criticized as an explanatory framework (i.e., it does not work to simply replace “nature” with “society”).<sup>98</sup> The linguistic turn, the naturalist turn, and finally the turn to practice (including literary, rhetorical, and material practices)<sup>99</sup> is almost a return to what Lacan was saying all along. Authority resides in maintenance of a language, and science is a discursive practice.<sup>100</sup> Scientific discourse, of course, is not just scientific journal articles, or the internal accounts of scientists themselves, but the popular literature, the jokes, the ethnographic interviews<sup>101</sup> – and now we are getting closer to psychoanalysis. And yet, in science studies there is a certain sense of science as a pragmatic practice – there is no “rational account” of theory choice, no normative philosophy of science, no determinative paradigm; there is primarily a *surface*: the local practices, conversations, values, and solved problems.<sup>102</sup> For Lacan, the really interesting material *is* below the surface, but he does not identify determinative rationality, norms, or scientific theories. Lacan is concerned with language as a whole – a “system of signs” that are “concretely instituted” to form “an order from which there is no exit”, a “network, a net over the entirety of things.”<sup>103</sup> We, and scientists, “are inside it [and] we can’t get out of it”.<sup>104</sup> Scientific progress is “the progress of a single symbolic system”,<sup>105</sup> a well-made language, but as a language of objectification it misses subjectivity –

<sup>98</sup> *Supra* n. 90, at 286.

<sup>99</sup> See generally Lenoir, *supra* n. 12. See also Corfield, *supra* n. 16, at 193–194: “One of the biggest shifts in recent Anglophone philosophy of science has been a move away from a total immersion in issues of theoretical representation and confirmation to a consideration of the importance of experimental intervention, instrumentation and laboratory practice. . . . One could argue that, as far as psychoanalysis is concerned, the . . . tractable phenomena in the human sciences are not the ordinary speech and actions of the millions, but the dialogue staged in the consulting rooms . . . where a clearer presentation of the human condition is available to researchers.”

<sup>100</sup> *Supra* n. 27, at 72; Lacan, *The Psychoses*, *supra* n. 50, at 63.

<sup>101</sup> See M. Mulkay, J. Potter and S. Yearley, “Why an Analysis of Scientific Discourse is Needed”, in K. D. Knorr-Cetina and M. Mulkay, eds., *Science Observed: Perspectives on the Social Study of Science* (London: Sage Publications, 1983), 199.

<sup>102</sup> *Supra* n. 93, at 120–121 (interview with Karin D. Knorr-Cetina).

<sup>103</sup> See Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 262.

<sup>104</sup> See Lacan, *supra* n. 52, at 31.

<sup>105</sup> See Lacan, *Freud’s Papers . . .*, *supra* n. 47, at 264.

science therefore misdescribes itself in scientific discourse; it lies about its status *as* a discourse. Even Lacan's later emphasis on the real, which roughly approximates or is a specific type of the *naturalist* turn, is not a rejection of the symbolic order. Just as Latour's naturalist turn is not a rejection of social and narrative aspects of science, Lacan's later work continues to recognize science as a discourse.

Bourdieu comes closest to Lacan in his notion of scientific authority as "a particular kind of social capital" which "can be accumulated, transmitted, and even reconverted into other kinds of capital. . . ." <sup>106</sup>

It is the scientific field which, as the locus of a political struggle for scientific domination, assigns each researcher, as a function of his position within it, his indissociably political and scientific problems and his methods – scientific strategies which . . . are at the same time political strategies. Every scientific "choice" – . . . area of research, . . . methods, . . . place of publication . . . – is in one respect – the least avowed, and naturally the least avowable – a political investment strategy, directed . . . towards maximization of strictly scientific profit, i.e., of potential recognition by the agent's competitor-peers. <sup>107</sup>

The scientist's investments are therefore "organized with reference to – conscious or unconscious – anticipation of the average chances of profit". <sup>108</sup> (Lacan once remarked that in the modern sciences, "no one questions himself as to what there must be in the desire, for example, of the physicist. . . ." <sup>109</sup>) For Bourdieu, as each scientist struggles for recognition,

what is at stake is in fact the power to impose the definition of science . . . best suited to his specific interests. . . .

The . . . dominant are those who manage to impose the definition of science which says that the most accomplished realization of science consists in having, being and doing what they have, are, or do. <sup>110</sup>

The parallel with Lacan's conception of scientific discourse is clear because the *official fiction* produced by dominant scientists

is not in the least fictitious because the symbolic officinary from which it derives its legitimacy enables it to perform a symbolic function similar to that performed for liberal ideology by the notions of "public opinion". <sup>111</sup>

<sup>106</sup> See P. Bourdieu, "The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason", in *The Science Studies Reader*, *supra* n. 12, at 33–34.

<sup>107</sup> *Ibid.*, 33.

<sup>108</sup> *Ibid.*

<sup>109</sup> Lacan, *supra* n. 32, at 9–10.

<sup>110</sup> *Supra* n. 106, at 34.

<sup>111</sup> *Ibid.*

This account of science is to be distinguished from a sociological account of a scientific community imposing its norms and values on its members, which is probably the fiction “which the upholders of the scientific order have an interest in imposing on others”.<sup>112</sup> We need to go one level deeper than the level of readily identifiable institutional gate-keeping and professionalization procedures, because to say *that* is how science works is what scientists have been saying all along!<sup>113</sup> Moreover, we should not accept the distinction between “pure social representation, symbolic power, marked by an elaborate apparatus of emblems and signs” – which everybody acknowledges – and technical competence, the recognition of which renders the former fictitious and in the end irrelevant.<sup>114</sup> For Bourdieu, “all this social fiction is in no way fictitious [because it] modifies social perceptions of strictly technical capacity”.<sup>115</sup> For Lacan, it is not the anonymity of power – after a revolution, or in churches – that sustains it, but because power is “reduced to the words that signify it” and it “resides in the language that” is maintained.<sup>116</sup>

With respect to the place of science and scientific discourse in law, the adoption of an idealized conception of science, matching scientists’ own self-understanding, invites scientific discourse into law. Notwithstanding an adversary system wherein scientific experts for one party are regularly challenged by opposing counsel, those challenges are understandably limited by the discourse of science. If the problem in law and for science studies scholars is to explain why the social, institutional, and rhetorical aspects of science matter, Lacanian psychoanalysis offers a preliminary explanation of how the scientific enterprise rests on an authority-maintaining discourse, and why the subjectivity of scientists is eclipsed and/or misdescribed. Lacan was not offering continuing legal education in his seminars, but he did explore his own experience with the demarcation problem – could psychoanalysis be considered a science? Along the way, he identified the severe limitations of the discourse he was trying to satisfy.

The popularity of ethnomethodology (and ethnographic analyses of scientist/informants) nowadays in science studies (including the sociology of scientific knowledge, and science and technology studies) suggests a link between psychoanalysis and the effort to identify the institutional,

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<sup>112</sup> *Ibid.*

<sup>113</sup> See, e.g., D. Goodstein and J. Woodward, “Inside Science”, *American Scholar* 68/4 (1999), 90 (gatekeeping reward system and authority structure produce useful results).

<sup>114</sup> *Supra* n. 106, at 32.

<sup>115</sup> *Ibid.*

<sup>116</sup> *Supra* n. 27, at 72.

rhetorical, political, economic, and other social aspects of the scientific enterprise. In his concluding lecture of Seminar XI (1964), Lacan pointed out that a scientist

could be approached in his style, his morals, his mode of discourse, in the way in which, through a series of precautions, he protects himself from a number of questions concerning the very status of the science of which he is the servant.<sup>117</sup>

Alan G. Gross, in *The Rhetoric of Science* (1990), recommends

a systematic examination of the most socially privileged communications in our society: the texts . . . through which scientific knowledge is created and disseminated. We can argue that scientific knowledge is not special, but social; the result not of revelation, but of persuasion.<sup>118</sup>

Joseph Rouse, broadening rhetorical analysis to cultural studies, sees scientific work as

situated within narratives that are not merely retrospective but are also constitutive of its sense.

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A more adequate model for a philosophy of science might well be interdisciplinary cultural studies, . . . [focusing] on the ways meaning emerges from agents' interaction with one another and their surroundings. . . . The direction of cultural studies toward mainly public performance and discourse does not exclude any consideration of cognitive or other psychological processes.<sup>119</sup>

Notwithstanding these compelling studies of scientific practices, as long as the scientific practitioner's own perspective is privileged in law, it does not matter how science is made, once it is made:

[P]ractitioners (as well as social scientists) make reference to social factors in connection with scientific results which have not yet been fully established, but tend to exempt these results from social explanations when they have become generally accepted. . . . For participants, established scientific results become part of an independent, technical realm, in relation to which 'social' factors have no explanatory relevance. . . . However, one of the central tendencies in recent work has been to avoid adopting participants' folk sociology and try to concentrate analytically instead on describing how participants construct and deconstruct the technical substance of the natural world along with their own social world of science.<sup>120</sup>

<sup>117</sup> Lacan, *supra* n. 32, at 264.

<sup>118</sup> A. Gross, *The Rhetoric of Science* (Cambridge, MA: Harvard University Press, 1990), 20.

<sup>119</sup> *Supra* n. 10, at 170, 177–178.

<sup>120</sup> K.D. Knorr-Cetina and M. Mulkay, "Introduction: Emerging Principles in Social Studies of Science", in *Science Observed*, *supra* n. 101, at 13.

With the recognition of a discourse of science, a distrust of scientists' own internal accounts, and an ethnographic method of interviewing scientists and analyzing the transcripts, science studies scholars are in a position to identify the *unconscious* of science itself. The categories that Lacan brings to the table – symbolic order achievements, a forgetful discourse of science, subject positions that determine apprehension – demonstrate that the subject of science is also the subject of law. An analogy is not an argument,<sup>121</sup> Lacan would say, but in the case of expert scientific witnesses in court, attorneys during cross-examination would do well to adopt the stance of psychoanalysts – listening for cues, and giving voice to the institutional, rhetorical, and other social aspects of science, to its subjectivity.

The goal of legal ethnography would not, in the first instance, be to criticize science, but to describe how science actually works. A certain degree of devaluation is inevitable, but just as Lacan did not reject the scientific enterprise, lawyers and judges need not view scientific discourse as peculiarly delusional. The problem in law/science relations is the idealization of science, by which I mean the acceptance in law of science's own self-image. Once accepted, once the cultural, institutional, and rhetorical aspects of science are *defined* as marginal, then the scope of inquiry is narrowed. If, on the other hand, science is defined as a discourse, as a symbolic system or activity, then the idealized discourse of science becomes the *surface*, the conscious phenomenon, available for analysis of what is below or behind, or what went before.

## CONCLUSION

Could law function with psychoanalytically inspired attorneys? Recall the neutrality of the analyst in the Freudian tradition – no value judgements, no advice, just trying to figure out what is going on and why.<sup>122</sup> Many judges nowadays are comfortable with the limitations of science – they are less deferential, less expectant of certainty, and therefore more willing to concede that a verdict is a rhetorical accomplishment. While few judges are social constructivists, fewer every day are idealistic concerning science,

<sup>121</sup> Lacan, *The Psychoses*, *supra* n. 50, at 289.

<sup>122</sup> See Pierre Legendre, "Protocol of the Love Letter", in *Law and the Unconscious*, *supra* n. 86, at 84: "[I]t has become absolutely necessary to reintroduce non-knowledge in its own right, the dimension of horror, of comedy, of strangeness, or of masochism to which the unconscious, the maker of letters and words, submits us. At the same time, . . . psychoanalyses is neither an explanation of the world or of society, it is not an official message, it leaves the questions posed by life unanswered."

and a certain pragmatism has set in.<sup>123</sup> That is not to say judges ignore science, but they acknowledge its uncertainties and question its certainties. An opportunity, therefore, arises for attorneys and judges to explore the “circuitous path by which [science] came into existence.”<sup>124</sup>

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<sup>123</sup> See L.H. LaRue and D. Caudill, “Post-*Trilogy* Science in the Courtroom: What are the Judges Doing?”, *Journal of Civil Litigation* 13 (2001–2002), 341–357.

<sup>124</sup> *Supra* n. 26.