The articles in Part 2 illustrate the vulnerability of knowledge in transmission: forms, functions, and signals change in local responses to individual attempts to introduce European time and space representation techniques. The mathematician Sidki Efendi, for instance, leveraged Philippe de La Hire's eclipse prediction machine for the Hijri calendar. Clocks with automatic adjustment mechanisms emerged both in Turkey and in Japan, but while Johann Meyer's (1843–1920) family business in Istanbul remained unique, Japanese artisans, cut off from European features, soon absorbed the craft and Edo-Japan society integrated the new device into the local system of public bell and drum time indication. In the East, societies changed clocks, whereas in the West, clocks changed society, as David S. Landes (1983) and Peter L. Galison (2003) have shown.

Another recurring theme in the book is a rejection of what later became modern globalized science. Deepak Kumar's analysis of the lines drawn between traditional and modern medical orders in colonial India demonstrates that borderlines drawn during the nineteenth century still hold sway in modern Indian notions of a treatment's efficacy and purpose (p. 242). The astronomer Zhang Yongjing, resisting Jesuit thought, contributed to the cultural labeling of astronomical calculation methods, and clashes between religious beliefs and modern science were central to the identification of contemporary Islamic medicine. Manolis Patiniotis asserts that their encounter with modern science caused Greek actors in the eighteenth century to construct a new identity of thought based on traditional natural philosophy.

Science between Europe and Asia provides a good set of "variation-finding comparisons" (Charles Tilly, *Big Structures, Large Processes, Huge Comparisons* [Russell Sage, 1984], p. 145) or what Michel Paty terms "differential studies" (Michel Paty, "Comparative History of Modern Science and the Context of Dependency," *Science, Technology, and Society*, 1999, *4*:171–204, on p. 178) between the two continents of Europe and Asia. It is useful for students and academics interested in comparative methodology. It should be consulted by anyone who studies the local production of foreign scientific and technological knowledge and those investigating the factors that gave modern science its many local origins.

DAGMAR SCHAEFER

Bruno Latour. *On the Modern Cult of the Factish Gods*. (Science and Cultural Theory.) x + 157 pp., bibl., index. Durham, N.C.: Duke University Press, 2010. $19.95 (paper).

This slender, quirky, and intriguing book collects three *pièces d'occasion* that collectively extend the argument against the fetishism of facts so memorably advanced in Bruno Latour's *We Have Never Been Modern* (1993 [1991]). The first piece is a translation of a 1996 pamphlet that Latour wrote about an internship with an ethnopsychiatric practice at the Centre Devereux in Paris. The second republishes the introduction (coauthored by Peter Weibel) to the catalogue of the 2002 exhibition *Iconoclash*, which Latour co-curated, at the Zentrum für Kunst und Medientechnologie in Karlsruhe, Germany. The third selection was published in 2005 in the volume *Science, Religion, and the Human Experience* (Oxford), edited by James D. Proctor.

The three pieces are connected by themes of images and belief, fetishism and iconoclasm, and (to use more routine language) science and religion. In the first, "On the Cult of the Factish Gods," Latour reiterates his great theme, the principle of symmetry, or, to turn to the flip side, the unreality of supposed dichotomies (especially modern vs. nonmodern and the West vs. the Rest) that pose such an obstacle to the progressive composition of a common world.

In the second selection Latour again assumes a familiar stance, this time as a critic against critics who are not named but are supposedly familiar to us all—self-righteous idol smashers, who worship image destruction in the false belief that artifice disguises reality. This tendency fills him with frustration and sorrow: "Do we really have to spend another century alternating violently between constructivism and realism, between artificiality and authenticity? Science deserves better than naïve worship and naïve contempt" (p. 94).

This last remark leads to the theme of the third selection, an essay written as if to be spoken as a lecture or even a sermon. To my mind, this is the most illuminating of the three pieces with regard to the fundamental convictions that shape Latour's wide-ranging and provocative work. He is smitten by the strangeness of science—its weirdness, even—that comes with its distance from the everyday experience of the visible world. He contrasts this with the sense of close presence that characterizes experiences of both love and religion. Science and religion should be compared not as matters of belief, he asserts, but as utterly different ways of getting

from the visible to the invisible. The experience of science depends on a long trail of inscriptions to do this, while religion does so through constant re-enactments that bring a renewed sense of presence.

In this essay Latour refers to "the tradition of the Word in which I have been raised" (p. 105). If it had not been evident at the start of his career, it is certainly evident in *On the Modern Cult of the Factish Gods* that this tradition is the key to the rest. Latour has always expressed this indirectly, trying to bring a renewed sense of presence, rather than directly through argument. The style is the man: the neologisms ("factish," "Iconoclash"), the culturally mixed metaphors ("freeze-framing" the Second Commandment)—in such ways he composes sermons that try to keep a flow of thought, constantly re-realized and re-represented, close and vitally present.

Latour also does this through literary form, by glossing his own work with prefaces, notes, and other self-commentaries. I would especially recommend the footnotes of this book, which review many of his previous works and those of his colleagues, rechanneling and reorganizing the flow of thought. When graduate students read Latour, they often latch onto the concept of actor-network, which gives them a conceptual tool they are happy to appropriate because it seems applicable to so many intellectual tasks. But in the notes to this book—which make multiple comments on actor-networks, anthropology, culture, nature, and science—you see how Latour's mind is still flowing rapidly and powerfully beyond previous thinking. The last thing he would want is for his ideas to be freeze-framed into an image of science studies, which would forsake the intellectual vitality and suppleness of their creator.

ROSALIND WILLIAMS

Lydia H. Liu. *The Freudian Robot: Digital Media and the Future of the Unconscious*. xi + 302 pp., illus., tables, bibl., index. Chicago/London: University of Chicago Press, 2010. $24 (paper).

Lydia Liu's *The Freudian Robot: Digital Media and the Future of the Unconscious* is a wide-ranging experiment in rethinking digital media and its relationship to human subjectivity by recourse to psychoanalysis and the invented figure of a "Freudian robot." While the territory of psychoanalysis and digital media is well trodden, this book's contribution lies in its reframing of the human–machine interaction in a manner that refuses a return to poststructural criticism while challenging the terms of a posthumanism framed by discourses of the body (or lack thereof), information, and antagonism to signification.

Liu defines this robot as "any networked being that embodies the feedback loop of human-machine simulacra and cannot free her/him/itself from the cybernetic unconscious" (p. 2). At once invoking a regular theme in psychoanalysis involving mechanical behavior in the psyche and the human predilection to repeat behavior irrationally, Liu also hopes to update this model by adding the term "digital" by way of the "robot"—attaching long-running psychoanalytic concerns to the logic of computation and numeracy. That this revision of the cybernetic is in terms of Freudian repetition automism is the conceit that allows Liu to trace an alternative genealogy of cybernetics and information science embedded in psychoanalysis, literature, and writing while simultaneously making contact with histories of colonialism, literary and artistic experiment, and non-Western languages and epistemologies along the way. This wide-ranging and creative integration of unlikely sources makes this a text that often feels like a reperformance of the arbitrary and incoherent babble of the dream as initially conceived by Freud. One might even say that Liu puts the reader in the position of the analyst, with the mission to produce narrative coherence from the nonlinear flows of the analysand's recollections.

While this interrogation into psychoanalytic practice might seem peripheral or even irrelevant to the social and historical study of science, Liu makes a strong case to the contrary. At stake in this discursive reframing of digital media, she argues, are fundamental questions of technological determinism and politics. Do humans and digital machines necessarily have to mime each other? Are there alternative ways to consider our relationships to machines and therefore with each other? Finally, is the nature of this unconscious that forms our subjectivities linked in critical ways to post–World War II American forms of governance? "We ought," she writes, "to be concerned with the political consequences of an emerging society of Freudian robots, which is where American society is headed and attempts to lead the world" (p. 11). This is a very large claim. Liu makes such statements by assuming that Cold War rationality is based in a historical transformation of language into a form of writing and a practice of symbolic manipulation produced through redundancy and algorithmic patterning instead of through syntax and semantics. Liu makes this "language" or "writing" (and she often