icine. Psychiatric *furor therapeuticus* found its climax of sorts in the emergence of lobotomy. Szasz tells the sad story of the lobotomized Rosemary Kennedy, an unfortunate member of the Kennedy clan who, because of her alleged “mild retardation,” was regarded by her father, Joseph Kennedy, as a risk to the public image of the family. Even more horrifying is the tale of Howard Dully, whose story became known (even to me in faraway Finland) in 2005, when National Public Radio broadcast a program featuring Dully, who was then a fifty-six-year-old bus driver and a former “patient” of Walter Freeman, the best-known and most infamous lobotomist. In 1960, as a result of his stepmother’s determination to get rid of Howard, Freeman operated on the boy, who was only twelve years old and without any trace of psychiatric disorder. As Freeman himself wrote in his notes, it was a question of “changing Howard’s personality by means of transorbital lobotomy” (p. 168). Indeed, ever since the operation, Howard has felt as if something is missing from his soul.

True to his basic conviction that psychiatry is a harmful pseudoscience, Szasz is equally hostile toward psychopharmacology and its principal excuse for prescribing drugs: that drugs prevent suicide. Szasz, a libertarian and a defender of voluntarism as the prerequisite for human dignity, challenges this dogma by claiming that suicide is a human right: if a person wants to end his life voluntarily, we should respect his existential perspective, especially when we talk about old-age depression. His account of the “mass drugging of American children” is disturbing, although he refers to a well-known phenomenon that has been critically discussed by many concerned physicians and academics before him. But few of them are ready to accept Szasz’s verdict on child psychiatry: “I have long maintained that *child psychiatry is child abuse*” (p. 206). His take-no-prisoners approach is what distinguishes him from most critics of mental health care, who are much more moderate. One such critic of psychopharmacology is the psychiatrist and historian David Healy, whom Szasz characterizes as “hypocritical” (p. 179).

Coercion as Cure is above all an angry and spirited manifesto: Szasz has set himself the task of uncovering the true face of psychiatry, which is that of a medically sanctioned instrument of coercion. All his arguments derive ultimately from the belief that the psychiatrist-emperor has no clothes. And this belief seems to be founded on his “somaticist” assumption that because mental illnesses cannot be detected anatomically or physiologically, they do not exist (“schizophrenia is modern psychiatry’s foundational fiction” [p. 186]). Also, as a libertarian, Szasz sees psychiatry as an outcome of “socialist-statist” ideology and politics, which unduly restricts the political and existential freedom of individuals. His thesis easily lends itself to excesses (e.g., “the psychiatrist tends to have contempt for the psychotic” [p. xi]), but many of his arguments merit serious consideration. Historical research on psychiatry has documented so many questionable ideas, diagnoses, explanations, and methods of treatment that Szasz’s criticisms cannot be brushed aside. As long as we remain in the dark about the nature of mental illnesses, and as long as we do not have a true scientific breakthrough in psychiatry, Szasz’s critical voice deserves our attention. His statements may be one-sided, extreme, and exaggerated, but they are certainly relevant and worth discussing.

PETTERI PIETIKAINEN

Andrea Westermann. *Plastik und politische Kultur in Westdeutschland.* (Interferenzen, 13.) 387 pp., figs., bibl., index. Zurich: Chronos Verlag, 2007. €38 (paper).

Floor coverings, drainpipes, wire insulation, window frames, shower curtains, rubber boots—these are just a few of today’s practicalities made out of polyvinyl chloride (PVC). In *Plastics and Political Culture in West Germany*, Andrea Westermann presents a very dense and rich sketch of the first fully synthetic thermoplastic material, polyvinyl chloride. The manufacturing and uses of PVC, which was developed in the 1930s by IG Farbenindustrie AG, heralded the arrival of “plastic” as a mass product in the German Federal Republic during the 1950s. As a historian of technology, Westermann uses the evolution of PVC to describe the transformations of West German political culture. The book’s leading question is, What function do technoscientific artifacts and technical infrastructure have in the development of collectivization? Westermann’s central interest is to analyze the effects that the introduction of plastic has had on the reproduction of social order, its influence on political culture, and the factors that determined social change in the German Federal Republic between 1945 and 1980. In her discourse on the uses of PVC, she shows the interdependence of technoeconomics and sociopolitical change in the Federal Republic of Germany. According to Westermann, as an artifact PVC has had not only a material function but also the potential to define cultural identity. From this perspective, PVC has functioned as a medium for societal self-reflection. Westermann proposes that PVC played

a role in the depoliticization of the early Federal Republic of Germany, which advanced into a gradual repoliticization by the end of the 1960s.

In the first chapter, Westermann charts the metamorphosis of the plastics industry and discusses how industry leaders tried to repudiate their involvement in World War II. Their collaboration with the National Socialist regime led to a legitimization crisis for the industry after the war. Westermann also examines the professional mentality of plastics "protagonists" from 1900 to the 1960s—for example, in her appraisal of the "K'52" exposition. At this event the industry emphasized the scientific significance of plastic to the public. In the second chapter, Westermann disputes the plastic actors' post–World War II central dogma of "a fundamental new era" and exposes the continuities between 1945 and 1960. She looks at technical norms in the use and production of plastic for a mass market as a form of solidarity, then discusses plastic's roots as a substitute material and a surrogate. The most important point in Chapter 3 is that many Germans started identifying themselves as "consumers" and even came to attach this identity to their German-ness between 1945 and 1960. After World War II, plastic as a material was not only important for the redevelopment of West Germany; it was also a central element in the emerging *Verbraucherdemokratie* (consumer democracy). In this newly formed democracy, choosing to take part in political culture was demonstrated by the act of consuming. Chapter 4 treats the emergence of problems pertaining to PVC as a carcinogenic material from 1965 to 1980. During this period plastic went from being an unproblematic good for the citizen consumer to being a sign of the limits to technological growth. First, the production of PVC was recognized as hazardous, causing the "vinyl chloride" illness that sometimes led to death; second, plastic's destructive effects on the environment were denounced. From this perspective, plastic has become a central focus in criticism of the consumer society since the 1970s.

Westermann's main argument—that PVC is an artifact that enables historians to observe changes in political culture—is inventive, plausible, and fascinating. The book, however, does not always demonstrate how synthetically produced materials have actually contributed to coordinate collective or individual actions. Overall, Westermann has written a theoretically well-informed analysis of plastic as an important and even dazzling artifact in German history. In addition, the book reflects the advantages of dealing with artifacts from the perspective of the history of technology. *Plastik und politische Kultur in Westdeutschland* is worth reading, not only for historians of science and technology but also for those interested in the cultural and social history of Germany in the postwar era.

BEAT BÄCHI

■ Sociology and Philosophy of Science

Karen Barad. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. xiii + 524 pp., illus., bibl., index. Durham, N.C./London: Duke University Press, 2007.

Meeting the Universe Halfway is an ambitious, thought-provoking, challenging book. Drawing "on the insights of some of our best scientific and social theories, including quantum physics, science studies, the philosophy of physics, feminist theory, critical race theory, postcolonial theory, (post-)Marxist theory, and poststructuralist theory," Karen Barad seeks to "provide a transdisciplinary approach that remains rigorously attentive to important details of specialized arguments within a given field, in an effort to foster constructive engagements across (and a reworking of) disciplinary boundaries." She is self-confident, perhaps at times overly so, and believes that her approach "is sufficiently robust" not only to build meaningful conversations between the sciences and other areas of study" but also "to contribute to scientific research" and to "the founding of a new ontology, epistemology, and ethics including a new understanding of the nature of scientific practice" (p. 25).

Quantum mechanics plays a central role in her approach. It is undoubtedly the most revolutionary physical theory propounded in the twentieth century. Even more than the special and general theory of relativity, it required a fundamental reconceptualization of what a physical theory describes and the nature of what is meant by physical reality. The "Copenhagen" interpretation of quantum mechanics was, and is, the dominant interpretative framework of quantum mechanics. It was synthesized principally from the work of Werner Heisenberg, Max Born, Niels Bohr, Pascual Jordan, Paul Dirac, Wolfgang Pauli, and John von Neumann, with Heisenberg and Bohr the public spokesmen and Pauli the deeply influential behind-the-scenes critic and important contributor. In its "Copen-