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***Plastik und politische Kultur in Westdeutschland.* By Andrea Westermann. Zurich: Chronos. 2007. 387 pp. €38 (paperback).**

Between the end of World War II and the 1970s, plastics consumption in the Federal Republic of Germany grew spectacularly. By 1969, per capita consumption in West Germany was very nearly 50 kilograms, higher than in any other western industrialized country, something all the more remarkable owing to the German experience with plastics as cheap and shoddy ersatz products during World War II. This is an important story, and one with many dimensions. The aspect most well developed in the literature concerns the producer side: plastics were a major source of growth for large (and some small) German chemical firms in the postwar period, and sales of them in domestic and foreign markets were an important factor in explaining the presence of three German firms among the top five chemical companies in the world by the 1970s. But there are of course many other aspects to the story, some with far-reaching implications. What, for instance, was the contribution of research and development to the creation and commercial application of new thermoplastics? How did the chemical industry, which produced the raw plastics, work with the plastics processing industry in translating plastics into products for other producers and for consumers? What was the role of plastics in the emergence of a West German consumer society? What, if any, symbolic function did plastics serve in West German politics and society? When, how, and with what effects did the backlash against plastics in the late 1960s and beyond come about?

Andrea Westermann addresses these and many other questions in this fascinating and well-written book. Using theory and approaches drawn primarily from science and technology studies, she examines not only the research efforts that brought the most important and controversial plastic of the postwar period, polyvinyl chloride (PVC), into existence and then into the marketplace, but also the roles of a variety of users of the material (such as processors, designers, consumers) in shaping the process of technological change. She also investigates 'users' of plastics in a completely different sense: the use of the material, often symbolically, in political debate to attempt to define 'modernity', to legitimize the 'social market economy' or to call into question the consumer society by attacking the environmental and health effects of plastics production and consumption. She convincingly demonstrates throughout that plastics were not just a material, but also a vital part of political communication.

The book is divided into four main sections. The first focuses on the development of modern thermoplastics, and in particular PVC, by actors from science, engineering and industry from the early twentieth century to 1960. She makes three particularly fascinating contributions here. The first involves a detailed investigation of the gradual but necessary reconceptualization of how scientists understood 'plastic' in the 1930s, in other words the move from thinking in terms of celluloid and other 'half synthetics' to fully synthetic thermoplastics. Second, she highlights the vital role of military considerations in the advance of research in this area. Finally, she examines the postwar identification of PVC with modernity. The second section looks primarily at issues relating to production, not only of PVC itself, but also the process of translation of PVC into something that

could actually be sold as a product, something which was no mean feat. Here, she reinforces a point that Paul Erker has made in relation to the use of synthetic rubber by tyre producers in the 1930s and beyond: the materiality of the synthetic product requires adaptation of existing apparatus as well as new ways of organizing production processes, not to mention the need to work out a bewildering variety of details, such as techniques for producing the material in attractive colours and/or for combining it with other materials.

The third section considers the political dimension, concentrating on the role of plastics in creating a 'consumer democracy' in West Germany. Here, the analysis of trade fairs is particularly vital to the argument, and she points out that Ludwig Erhard, as Economics Minister during the 1950s and early 1960s, used industry expositions 'as a political stage' (p. 192). The fourth section provides even more novel approaches and offers remarkable information, examining the environmental and health issues which emerged during the late 1960s in relation to PVC production and consumption. Here she examines PVC as a carcinogen in the workplace, issues raised by PVC in relation to the democratic oversight of risks from science and technology, and PVC as a contributor to growing problems in waste disposal. In sum, this is a fascinating, well conceived and well researched work. It deserves a wide readership.

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