they could not represent themselves and then, with that treacherous concept, "self-Orientalization," to do essentially the same thing because the Orientals did not say what you apparently think they should have said?

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Technology in Modern German History: 1800 to the Present

By Karsten Uhl. London and New York: Bloomsbury, 2022. Pp. v + 280. Hardcover £85.00. ISBN: 978-1350053205.

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A friendly couple in Stuttgart once proudly proclaimed to me that "das Schwabenland" was a "Land der Tüftler [a region of tinkerers]." Indeed, tinkering and engineering have played a prominent role not just in the Swabian popular historical imagination, but in the larger German one as well. Karsten Uhl provides a timely primer on the history of German technology, examining how technology shaped modern German society and culture and how German society and culture shaped technology. He highlights the continuities connecting modern German technology's history since 1800 as he chronicles how technology became an essential aspect of German identity. He ambitiously states at the outset that he will examine "how technology permeated all facets of life in modern Germany" (1). While he may not accomplish this lofty goal, he delivers a series of thought-provoking essays to stimulate further discussion and investigation by English-reading audiences.

Uhl begins his overview with an interesting vignette on the history of KUKA AG that serves as a metaphor for the narrative he constructs about modern German technology. Before the late nineteenth century, imitation characterized German technological development, borrowing heavily from other national models like Great Britain to achieve a global reputation in heavy industry. Here he relies on the prototypical example of Krupp AG. However, by the late nineteenth century, German technology moved beyond the status of imitator to become a global innovator in science-based technology. It was during this period that KUKA AG was founded, producing electrical lighting and appliances to address the demands of rapid urbanization. As Uhl explores in subsequent chapters, German firms like KUKA built on this initial success by diversifying their line of innovative products to include automated welding processes. By the 1930s, the firm moved into waste removal vehicles, as industrialization created new demands for environmental waste disposal, and started manufacturing its now iconic, orange-painted garbage trucks. KUKA remained innovative into the twenty-first century as a robotics manufacturer, still painted "KUKA orange," and was acquired in 2016 by the Chinese company Midea Group as it sought to automate its production processes. The fate of KUKA symbolizes the arc of German technological development, from early imitators to later innovators, and then as a model for further technological development.

The text is best understood as a series of separate essays covering the relevant historiography and various case studies. The first part summarizes the well-told story of German industrialization within the context of rapid urbanization. Using the advantages of latecomers to industrialization, German engineers and scientists steadily overcame the

made-in-Germany reputation of low-quality products by developing technological innovations to dominate the fields of high-tech industries like chemistry and electrical engineering. The confluence of state-driven initiatives, public education systems that emphasized applied technology and scientific learning, and private large-scale industrial research enterprises created a solid foundation upon which to build a system of innovation that allowed Germany to move beyond the position of technological imitator. However, the success of this German system of innovation has had important consequences for Germany moving into the twenty-first century, according to Uhl. The German economy is still a predominantly industrial economy, as the case of KUKA robots and automated production processes shows, leaving Germany again "backward" in comparison to the post-industrial economies of the rest of Europe and the United States.

To conclude the first part of the book, Uhl invokes Jürgen Habermas' ideology of technology to show how the German popular imagination became infused with an unshakeable faith in technological progress to solve the problems of modernity. And here begins the image of Germany as a land of tinkerers. The high-tech industrial successes created by the beginning of the twentieth century a uniquely German ideology, and not just among technocratic elites. Reformers and workers alike believed that technology was the answer to the social disruptions caused by rapid change. Regardless of one's socioeconomic status or politics, the response was always the same: the problems of modernity could be solved through further innovation. In the 1920s, architect and reformer Margarete Schütte-Lihotzky designed the Frankfurt kitchen, based on the American Taylorist model, to alleviate the chronic problem of affordable housing shortages for the working classes. Combing German innovations in household electrification with middle-class values of domestication, urban architects created new design standards that combined aesthetics, function, and efficiency. The Frankfurt kitchen captured the imagination of not only Germans and would become the model for European and Soviet public housing in the context of even more severe housing shortages after 1945. Of all the "peculiarities" of the history of German technology, Uhl singles out ideological continuities as a unifying theme.

In the book's second part, Uhl expands on the historiographical foundations of the first half to present a series of thought-provoking essays on how various technologies diffused into German society since the late nineteenth century. Drawing upon common examples in the history of technology, he reviews the literature and suggests new directions for scholarship. In a chapter on the relationship between human bodies and technological systems, Uhl uses the example of computerized numerical control to provide a more nuanced approach to the understanding of how disciplining the human body met the demands of the industrial age. CNC machine operators used sensory perception rather than manual dexterity, as workers' bodies became literal sounding boards attuned to the noises and vibrations of machines to identify problems with equipment. In another chapter, Uhl explores how DIY enthusiasts in both West and East Germany emerged in response to a broad cultural crisis in masculinity to further entrench the idea of the German tinkerer among the postwar generations. German car owners and computer hackers on both sides of the wall – whether out of necessity or as part of a larger wave of countercultural protests – embraced DIY projects to assert their historical agency after destruction and defeat. In the final chapter, Uhl returns to the theme of technology as ideology to draw out the pattern of continuities between the nineteenth and the twenty-first centuries. Uhl argues that the most important German social movements since 1945, those involving nuclear power and environmental degradation, still met with the unwavering German faith in technology to engineer solutions for safe and sustainable forms of endless energy sources.

While Uhl mostly succeeds at accomplishing the ambitious agenda he sets for his book, he muddles an otherwise excellent synthesis of the historiography by invoking the Sonderweg theory. Understandably, he wants to create a unifying framework to integrate the history of technology into more general histories of Germany. He relies on terms like "peculiar" and "backward" to describe German technological developments and overall economic

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development. This attempt to force the history of modern German technology into some normative trajectory is distracting and certainly does not provide a helpful structure to build his argument. As Jürgen Kocka reminded audiences in 2018, the Sonderweg refers to explanations of fascist dictatorship. However, as Uhl explicitly states in the introduction, the history of Germany technology is not a political history. Apart from discussions of Nazi autarkic policies and the regime's failed nuclear weapons project, the history of the Third Reich receives little attention. While Uhl's attempt to draw the lines of continuity over two hundred years of technological change is commendable, it is not clear how the continuities implied by the Sonderweg help scholars analyze more recent histories like that of KUKA. Contingency and context must be at the heart of any historical endeavor, and the scholarship in national systems of innovation and transnational technology transfer is advanced enough to move beyond the Sonderweg when constructing interpretative frameworks for the history of German technology.

Despite these theoretical distractions, *Technology in Modern German History* is an excellent and stimulating overview of essential themes in the history of German technology with a helpful bibliography of English-language sources.

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Konstruktiv gegen die Revolution. Strategie und Politik der preußischen Regierung 1848 bis 1850/51

By Konrad Canis. Paderborn: Ferdinand Schöningh, 2022. Pp. viii + 541. Hardcover €79.00. ISBN: 978-3506708342.

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This is not Konrad Canis's first work about the Revolution of 1848. He began his career as a historian looking at this issue in 1965, when he completed his dissertation, entitled *Der preußische Militarismus in der Revolution 1848*. Fifty-seven years later, he returns to the events of the revolutionary year of 1848 in order to modify some of his previous opinions and positions. However, it is not Prussian militarism on which Canis's extensively researched book centers, but rather Prussian political elites.

A recurrent theme in the story which Canis tells is the *Vereinbarungspolitik* and its constructive approach to suppressing revolution. The book explores and demonstrates the full extent of this policy at various levels and for individual processes over the entire course of the revolution and counterrevolution. Its objective was "to overcome the revolution not just by suppressing the uprising, but in particular through a strategy and reformist policy focused on modernization, if to a limited extent, in terms of focusing on a constitutional monarchy and a Prussian-German federal state" (vii). The book is divided into eleven chapters. Chapters 1 and 2 focus on revolutionary events in March 1848 and the *Vormärz* period. The subsequent four chapters analyze the policies of individual Prussian ministries. The second part of the book looks at the Prussian-German narrative line. Since it is impossible to mention all of Canis's arguments here, I have chosen a selection of them that I consider essential.

In Chapter 1, Canis tries to convince the reader that the revolution which broke out in March 1848 in Prussia was not unavoidable and could have been prevented right up until