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Florian Mildenberger. *Umwelt als Vision: Leben und Werk Jakob von Uexkülls (1864-1944).* Sudhoffs Archiv, Beihefte. Stuttgart: Franz Steiner Verlag, 2007. 320 pp. ISBN 978-3-515-09111-4.

Reviewed by Sander Gliboff (Department of History and Philosophy of Science, Indiana University)

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Vision is in the Eye of the Beholder

The German-Estonian aristocrat Jakob von UexkÃ¼ll (1864-1944) is an ambiguous figure in the history of twentieth-century biology and philosophy who worked at the intersection of several lines of research. From one point of view, his positive contributions to the physiology of sense perception, animal behavior, gestalt psychology, and ecology are impressive. His conception of the *Umwelt* as an organism-environment unit is appealing for its holism, and his analyses of how the organism perceives its surroundings and organizes those perceptions into its *Umwelt* resonates with Kantian philosophy and appears to have played a seminal role in classical ethology. Yet, from other viewpoints, his ideas have been disparaged as vitalistic, teleological, static, and anti-evolutionary. His *Umwelt* concept is considered too subjective to be useful in science, because it lets the organism construct its own environment and be its master rather than its product. Critics also hear mystical and metaphysical overtones in the claim that natural selection is superfluous and that the order or plan of nature somehow sees to it that organisms always are well adapted to their environments. UexkÃ¼ll's right-wing nationalistic politics, antisemitism, adherence to Houston Stewart Chamberlain's racial theories, and initial support of Adolph Hitler have further clouded perceptions of him.

But the outlook for UexkÃ¼ll might be improving, if Florian Mildenberger is reading the present *Zeitgeist* correctly in this new biography. Mildenberger identifies renewed interest in UexkÃ¼ll in the environmental movement, biosemiotics, psychosomatic medicine, cognitive science, and the history and philosophy of biology. Be that as it may, much about UexkÃ¼ll will also intrigue historians of biology, as well as German historians generally, regardless of how much esteem his scientific ideas enjoy today. His career spanned the Wilhelmine, Weimar, and National Socialist periods and illustrates how at least one scientist was able to adapt to the changing political, institutional, and intellectual environments. Historians of biology will want to study him for his theories of the animal mind and environment; for his roles in developing new experimental approaches to animal cognition or in fighting the turn-of-the-century battles between mechanism and vitalism, holism, and reductionism; for his attacks on social Darwinism from the Right; and as an oppositional figure and foil for mainstream biologists.

Perhaps the best-known historical treatment of UexkÃ¼ll is by Anne Harrington, who groups him with several other holistically minded biologists and gestalt psychologists, and connects them all very closely to cultural currents in Wilhelmine and Weimar Germany, such as national aspirations for wholeness in a politically fragmented country, or disenchantment with mechanistic science and modernity.[1] In contrast, Mildenberger takes a longer, geographically broader view and connects UexkÃ¼ll less strongly to his German contemporaries

than to the early nineteenth century and to Estonia. He sees UexkÃ¼ll's ideas emerging, at least in part, from the *Naturphilosophie* of Friedrich Wilhelm Schelling (1775-1854) and from concepts of organic change (*Entwicklung*) associated with Estonian embryologist Karl Ernst von Baer (1792-1876). Mildenberger suggests that UexkÃ¼ll's eventual rejection of Darwinian evolution in particular owed a great deal to Baer's view of nature as harmonious, orderly, law-governed, and purposeful, as opposed to the randomness and purposelessness of Darwinian variation and change. The scientific principles are reinforced, if not dictated, by political calculations. From UexkÃ¼ll's German-Estonian perspective, Darwinism appeared to be a threat to the social order as well as to the natural one, a tool for undermining the traditional aristocracy and for bolstering Slavic nationalism and Soviet Marxism.

The book follows UexkÃ¼ll's trajectory from Estonia to the University of Heidelberg and to the marine biological laboratory in Naples (the Stazione Zoologica) for research in the 1890s on nerve conduction, reflexes, and muscle contraction in a variety of organisms. He spent a year experimenting and exploring in German East Africa in 1899-1900. Then, as a young, unaffiliated scholar in Heidelberg, with high ambitions for reforming the study of animal psychology and behavior, he struggled to gain a reputation and an academic position. He did not land a permanent job until 1914, at the age of 50, as head of a small Institut fÃ¼r Umweltforschung in Hamburg. Nevertheless, he could get little research done during the First World War and most of the 1920s. He became more active in politics, campaigning for German interests in the Baltic, and joining forces with Chamberlain to make biological arguments for German superiority over the Slavs. After the war, his politics took a sharp antisemitic turn, and he began to identify "world-Judaism" with Bolshevism and the Slavic threat to German hegemony in the Baltic. He welcomed Hitler's rise to power in the 1930s, expecting him to keep the Slavs at bay, but was bitterly disappointed by the Hitler-Stalin pact.

UexkÃ¼ll was probably at the peak of his scientific influence in the 1920s and 1930s, while he had a platform at the Hamburg institute from which to promote his views on holism, vitalism, and the biology of the state, and to combat what he saw as reductionistic and mechanistic trends in biology. Responses from the scientific community were always mixed, at best. One scientific achievement from these years that I found particularly interesting was his analysis of seeing-eye dogs in terms of his *Umwelt* concept, which had the dog's environment merging with that of the blind man. He and his collaborators were able to apply this insight advantageously to the training of the dogs. In so doing, they not only scored rhetorical points against Pavlovians and behaviorists, but also appealed to dog-loving National Socialist propagandists and filled a practical need of the Wehrmacht. The political support thus generated certainly helped keep his institute afloat during the Third Reich. UexkÃ¼ll retired in 1938 and moved to Capri, where he died in 1944. Two chapters extend the story beyond his death and deal with the reception of his ideas in the 1950s and 1960s and their more recent "rediscovery."

The book provides a detailed chronicle of UexkÃ¼ll's research projects, publications, political activities, and career moves. It also enumerates and briefly describes the principal works of his students, allies, and critics and compares them with UexkÃ¼ll's. It is meticulously documented with archival material from all over Europe, published primary sources, and an abundance of secondary citations. It is, however, short on explication, analysis, and interpretation of UexkÃ¼ll's ideas and especially of the "vision" alluded to in the title, which never fully emerges out of all the particulars. Despite Mildenberger's emphasis on the positive in UexkÃ¼ll's scientific legacy and kudos for his uncompromising independence of mind during stormy and repressive times, he still comes across (to me, at least) as less of a visionary than a stubborn reactionary.

Note

[1]. Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton: Princeton University Press, 1996).

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