

The institutional fate of Uexküll's umwelt theory at the University of Hamburg

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Abstract. Due to Jakob von Uexküll's umwelt theory, the Institute for Umwelt Research at the University of Hamburg, that was founded in 1928, was a unique institution worldwide for holistic research into animal behaviour and perception. However, Uexküll's vitalistic-teleological approach and his uncompromising anti-Darwinian stance increasingly isolated him. When the closure of his institute was imminent as part of his statutory retirement in 1935, Uexküll ingratiated himself with the National Socialists in a letter to the Reich Minister for Science, Education, and Culture, which serves as a starting point for the article's detailed discussion of his relationship to National Socialism.

Since umwelt theory could be used for the training of guide dogs and other animals useful for military purposes, the institute survived. Still, finding a suitable successor to Uexküll proved difficult because hardly anyone among the German zoologists believed Friedrich Brock, Uexküll's preferred candidate, would live up to Uexküll's originality. The most important opponent to Brock's appointment was Berthold Klatt, professor of zoology at the University of Hamburg, who did not expect any significant progress in zoology from Uexküll's umwelt theory. After Brock's death in 1958, the sworn circle of supporters of Uexküll's umwelt theory tried in vain to push through a successor from their ranks. At the instigation of Curt Kosswig, Klatt's successor in the Chair of Zoology, Franz Sauer succeeded Brock in 1959. However, a polemical article written by Gösta von Uexküll provoked a scandal, in the wake of which Sauer resigned. In 1960 the Institute for Umwelt Research became a department of the Zoological Institute, existing in the lecture timetables until 1966.

Thus, the fate of Uexküll's research institution depended mainly on external and personal factors or, to speak in Uexküllian terms, on the umwelten of the protagonists and antagonists.

Keywords: Jakob von Uexküll; Institute for Umwelt Research; University of Hamburg; umwelt theory; National Socialism; zoology; Friedrich Brock; Berthold Klatt; Curt Kosswig; Franz Sauer

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1. Introduction

Jakob von Uexküll's Institute for Umwelt Research (*Institut für Umweltforschung*) was doubtless a unique institution in its scientific scope. Founded in 1928 at the Faculty of Medicine at the University of Hamburg, its origin lies in Uexküll's Laboratory for Umwelt Research (*Laboratorium für Umweltforschung*), established in 1926 and located in a former kiosk adjacent to the Zoological Garden's old aquarium, whose director Uexküll had become in 1925.² There was no other comparable institute in the world due to Uexküll's very specific concept of 'umwelt'. This term has been translated into English in many different ways, e.g. 'sensory world', 'self-centred world', 'phenomenal world', 'self-world' or 'life-world' (cf. e.g. Uexküll 1957, 2010; Sutrop 2001; Heusden 2001). However, given its specificity, it is recommended to retain its original German form, which is quite common in English-language literature on Uexküll's umwelt theory.

Uexküll's doctrine of the umwelt constitutes one of the major zoological roots of biosemiotics (Deely 2001, 2004; Jämsä 2001; Kull 1999, 2001; Sebeok 1972: 61, 1989, 2001). Its core statements can be briefly recapitulated as follows. According to Uexküll (1909, 1910, 1920a: 63–68, 96–130, 1926: 78–86, 126–177, 1930; Uexküll, Kriszat 1934: 1–10), the umwelt of an animal is what the animal perceives of its *Umgebung* (surroundings) and on what it has an effect by its actions. Thus, the individual umwelt of an animal is nothing objectively given, but only generated by perception and action.³ In this context, Uexküll speaks of *Merkmale* (perception marks)⁴ and *Wirkmale* (effect marks), the former referring to what the animal perceives, the latter to what the animal can act upon. Thus, the umwelt of an animal consists of its *Merkwelt* (perception world) and its *Wirkwelt/Wirkungswelt* (effect world), that is, its range of activity. The things which constitute the umwelt of an animal are simultaneously *Merkmalträger* (carriers of perception marks) and *Wirkmalträger* (carriers of effect marks), as, on the one hand, they send out specific stimuli to the animal's receptors, and, on the other hand, they offer specific targets for the animal's effector organs. The perception

² Friedrich Brock to the rector of the University of Hamburg Arthur Jores, Hamburg, 2 April 1951, HSA (Staatsarchiv Hamburg, Hamburg State Archive), 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheet no. 182 [also in HSA, 364-13 Mat. Nat. 441312 (copy)].

³ For a history of Uexküll's concept of the umwelt in his writings, see Sutrop 2001. For an overview of the development of Uexküll's biological concepts, their reception within the scientific community, and the experimental research conducted by his disciples, see Brentari 2015; Kull 2001; Rütting 2004; Mildenerger 2007; Mildenerger, Herrmann 2014.

⁴ Where not otherwise indicated, I have used the English-language terms employed in Uexküll 2010.

world and the effect world are connected inside the animal in its *Innenwelt* (inner world). The neuronal bases of this connection are the *Merknetz* (sense net; Sutrop 2001: 450) and the *Wirknetz* (effect net; Sutrop 2001: 450). The loop starting from the reception of stimuli sent out from the carriers of perception marks, continuing via the perception world, the inner world, and the effect world, and finally ending with the effectors' action on the carriers of effect marks (which are identical with the carriers of perception marks) was called '*Funktionskreis*' ('functional cycle') by Uexküll (1920a: 115–118, 1921: 44–47, 1922: 269, 1926: 155–159, 1928: 100, 1931: 389–390). The functional cycle links perception to action. Based on the different biological meanings of the carriers of perception marks, Uexküll distinguished functional cycles related to prey or food, enemies, sexual partners, and the medium in which the animals live and move (Uexküll 1920a: 97, 1921: 46, 1926: 127–129, 1928: 100–101).

As far as the history of the Hamburg Institute for Umwelt Research is concerned, the most detailed accounts of the history of the institute have been presented by Mildenerger (2007) and Hünemörder (1979). The purpose of this paper is to shed light on some hitherto little known or unnoticed aspects of the gradual demise of the Institute for Umwelt Research at the University of Hamburg. It is well known that despite extensive experimental research carried out at his institute (Rüting 2004: 55–64), Uexküll and his umwelt theory were never fully acknowledged, which is also reflected by the fact that he was never appointed as an ordinary professor but only held a position as an honorary professor. The situation worsened when Uexküll reached his statutory retirement age in 1935. In all likelihood not out of conviction, but rather to ward off the closure of his institute, Uexküll decided to ingratiate himself with the National Socialists by emphasizing in a letter to the Reich Ministry of Science, Education, and Culture the differences between his approach and that of Pavlov, concluding that his doctrine and his institute were of the same importance to the Third Reich as Pavlov's doctrine and institute were to the USSR. A detailed discussion of this hitherto little-noticed letter and the reaction of some of Uexküll's colleagues to it is discussed in Sections 2.2 and 2.3 below. Based on Uexküll's publications, Schnödl and Sprenger (2021) recently claimed a high affinity between Uexküll's teachings and National Socialist ideas. Whether this assertion is true is critically questioned in Section 2.2.

From 1936 on, Uexküll intensively tried to establish Friedrich Brock (1898–1958) as his successor. While Uexküll considered Brock the only person apt to continue his specific field of umwelt research, the Faculty of Mathematics and Natural Sciences, to which the Institute for Umwelt Research had been transferred in 1939, offered resistance, with Berthold Klatt, ordinary professor of zoology, being the main opponent to Brock's appointment (see Sections 2.3–2.5). Klatt,

whose role as a key figure in the disputes about the Institute for Umwelt Research has so far been largely overlooked, was not interested in the philosophical implications of Uexküll's umwelt theory and did not expect it to lead to any progress in the field of zoology. Rather, he wanted to transform the Institute for Umwelt Research into an Institute for Animal Psychology. By soliciting external expert opinions, he did his utmost to show that Brock was not a suitable successor to Uexküll because of his lack of originality. The tensions that had already existed between Uexküll and Klatt, and continued between Brock, who was appointed provisional director of the Institute in March 1939, and Klatt, prevented any fruitful cooperation. Finally, it was the National Socialists who protected Brock and saved the Institute for Umwelt Research; this, however, did not happen for ideological reasons, but because they regarded its research as important for training dogs and other animals for military purposes (see Section 2.6).

After World War II, Brock finally became the director of the institute. The strained relationship between Brock and Klatt lost its relevance only with Klatt's retirement in 1953. Not long after Brock's death in October 1958, the formerly independent institute became part of the Zoological Institute as the Department of Biology, Ecology, and Ethology of Animals (Institute for Umwelt Research) [*Abteilung für Biologie, Ökologie und Ethologie der Tiere (Institut für Umweltforschung)*] in April 1960.⁵

Usually, the post-war decline of the Institute for Umwelt Research in Hamburg and the discipline of umwelt research is attributed to Brock's rigid and uncompromising adherence to Uexküll's original doctrine of the umwelt with all its philosophical implications, and to his failure to catch up with modern ethology (Mildenberger 2007: 210–215; Franck 2012: 152–153). While this interpretation is justified to a certain extent concerning Brock's position in scientific matters, we have to reevaluate his efforts in institutional matters. Furthermore, the purpose of this paper is to draw attention to some other, hitherto unnoticed, factors and developments, some of which can be regarded as unfortunate coincidences, which were decisive for the *de facto* demise of the Institute for Umwelt Research in 1960 (see Section 4). In particular, the unwillingness of Uexküll's former disciples and close relatives to accept a successor who did not come from their

⁵ Order (*Verfügung*) by Senator Landahl, 20 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970); School Board – University Division (*Schulbehörde – Hochschulabteilung*) to the rector of the University of Hamburg, to the dean of the Faculty of Mathematics and Natural Sciences, and to the director of the Zoological State Institute and Zoological Museum, Hamburg, 22 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) [also in HSA, 364-13, Mat. Nat. 441313 (certified copy), and in HSA, 131-13_353 (certified copy)].

circle, and a polemical newspaper article by Gösta von Uexküll proved to be counterproductive. It is a telling example of how the fate of a scientific discipline and research institution can depend on mainly external and personal factors or, to speak in Uexküllian terms, on the umwelten of the protagonists. Memorably, Uexküll himself once characterized the expert opinions on his institute and Brock as a 'menu of umwelten' (*Speisekarte von Umwelten*).⁶

2. The Institute for Umwelt Research during the Third Reich

2.1. The precarious situation in the second half of the 1930s

Jakob von Uexküll never held a zoology chair at the University of Hamburg, but he was an honorary professor with the Faculty of Medicine since November 1925 (Hünemörder 1979: 110). His domain was the Zoological Garden's old aquarium, to which a small institute under the name of the Laboratory for Umwelt Research (*Laboratorium für Umweltforschung*) was attached, which was renamed in 1928 as the Institute for Umwelt Research (*Institut für Umweltforschung*). Uexküll's charisma and the attractiveness of his doctrine of the umwelt (*Umweltlehre*) were great, as until 1934 more than 50 papers were produced by Uexküll's disciples (Brock 1934). As Brentari (2015: 36) has pointed out, "the scientific activities carried out by the *Institut für Umweltforschung* went in the same direction as early ethology did, in the same years but with other theoretical assumptions".

Although officially belonging to the Faculty of Medicine of the University of Hamburg, Uexküll regarded his institute as located in the no-man's-land between the Faculty of Medicine and the Faculty of Mathematics and Natural Sciences (*Mathematisch-Naturwissenschaftliche Fakultät*) (Hünemörder 1979: 110–111). Thus, it is not astonishing that when his retirement was imminent in 1935, both faculties gave their statements on the future of his institute and a potential successor to Uexküll.

In 1934, the Institute for Umwelt Research moved into dire straits. Although Uexküll was told in August 1934 by Karl Witt, president of the State Education Authority, that for the time being there was no intention to give up his institute,⁷

⁶ Uexküll to 'Euer Spectabilität', i.e. to the dean of the Faculty of Mathematics and Natural Sciences, Virtsu (Estonia), 19 July 1939, p. 1, HSA, 364-13 Mat. Nat. 441312 [also in HSA, 361-6_IV 2184 (transcript of Uexküll's handwritten letter)].

⁷ Uexküll to Hamburg's State Education Authority, University Division (*Landesunterrichtsbehörde, Hochschulwesen*), Hamburg, 18 October 1934, HSA, 361-5 II_G c 7/1, sheet no. 206; Uexküll to the dean of the Faculty of Medicine, Hamburg, 12 January 1935, 361-6_IV 2184, document no. 3 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 25 (copy)]; cf. Uexküll to Hamburg's State Education Authority, University Division, for the attention of Prof. Rein, Virtsu (Estonia), 20 August

two months later the Zoological Garden Exhibition Halls Corporation (*Zoo-Ausstellungshallen AG*) foreclosed on the Institute's premises, as the city of Hamburg planned to establish the park *Planten un Blomen* and to erect a large exhibition hall for the Low-German Horticulture Exhibition (*Niederdeutsche Gartenschau*) taking place in 1935. Moreover, the famous aquarium, designed by the English architect W. A. Lloyd and opened in 1864 as the first of its kind in Germany, both a site of recreational value for the general public and a research facility, was to be demolished to make room for a coffee house.⁸

Since at that time no replacement for the terminated premises was under discussion and Uexküll's retirement was imminent, there was an immediate danger of the institute disappearing completely. Interestingly, it was the students who took the initiative in this precarious situation. Karl Keudel vehemently lobbied the prorector of the University of Hamburg, Eberhard Schmidt, and 'all possible offices', as the prorector put it, for the preservation of the Institute for Umwelt Research.⁹ Keudel was among the enthusiastic participants in Uexküll's interdisciplinary colloquium which included biologists, psychologists, philosophers, and mathematicians.¹⁰ Further support came from Wolf Müller of the headquarters of the National Socialist German Students' Union, who referred to the "tremendous importance of the institute for the lively development of biology in the new Reich" and emphasized that the National Socialist students would not forget Uexküll's "struggle against an all-mechanizing biology".¹¹ To what extent there was such an affinity between Uexküll or his teachings and National Socialism, as suggested by Müller, and how different the views of contemporaries were on this, will be discussed in the next section.

1934, HSA, 361-6_IV 1247, vol. 1 [also in HSA, 361-6_IV 2184, document no. 1 (copy), and in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 8 (carbon copy of a copy)].

⁸ Uexküll to the mayor of Hamburg, Hamburg, 24 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 13.

⁹ Prorector of the University of Hamburg to Keeser, dean of the Faculty of Medicine, 23 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 11.

¹⁰ See the manuscript of a speech, probably given by Brock, on the occasion of the after-celebration of Uexküll's 70th birthday, p. 3, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947) (carbon copy).

¹¹ Wolf Müller, National Socialist German Students' Union, to Senator Witt, president of Hamburg's State Education Authority, to Rector Rein, and to dean Keeser, Hamburg, 24 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 14; see also Harrington 1996: 69, Mildenerger 2007: 168. (Translations from German are by the author of the article, unless indicated otherwise, S. K.)

The prorector reacted to this and asked Wolfgang von Buddenbrock, full professor of zoology at the University of Kiel, for a brief expert opinion on the scientific significance of Uexküll's institute.¹² Having emphasized Uexküll's "inexhaustible originality" in the experimental field, Buddenbrock added that Uexküll was also a typical outsider and undoubtedly lacked a general professional education. It, therefore, was the case that he was very wrong, especially in theoretical considerations, for example, about the Darwinian theory of evolution, which he rejected. Uexküll's research direction was not recognized by the "expert popes" (*Fachpäpste*) because they did not understand anything about it. While Uexküll understood the animal as an acting subject, the majority of physiologists saw their main task as something opposite, namely as dissolving life into an intricate system of physical and chemical relations. Still, because of Uexküll's originality, his research site should be preserved in any case.¹³

Unreserved support for Uexküll also came from Eduard Keeser, the dean of the Faculty of Medicine, to which Uexküll's institute belonged.¹⁴ Keeser described Uexküll as an ornament (*Zierde*) to the University of Hamburg and referred to an expert opinion prepared as early as 1933, in which the fruitful experimental research of Uexküll and his students, the overcoming of materialistic biology by Uexküll's teaching, as well as its practical importance for the training of guide dogs for the blind, were emphasized.¹⁵ In June 1935, Keeser, in a letter to the State Education Authority, again mentioning the positive opinion of the Faculty of Medicine two years earlier, "warmly advocated that the outstanding scholar [Uexküll] be retained in his post, as he was still in good health and fully able to perform his duties".¹⁶

¹² Prorector of the University of Hamburg to von Buddenbrock-Hettersdorf, 23 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 12.

¹³ Buddenbrock to prorector Schmidt, Kiel, 29 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 19.

¹⁴ Keeser, dean of the Faculty of Medicine, to the rector of the University of Hamburg, Hamburg, 25 October 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 15.

¹⁵ Dean [of the Faculty of Medicine, Keeser], addressee not named, Hamburg, 19 May 1933, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947) (copy). It is clear from Keeser's letter mentioned in the previous footnote that the addressee of this letter was Hamburg's State Education Authority.

¹⁶ Keeser to Hamburg's State Education Authority, University Division, 13 June 1935, HSA, 361-6_IV 1059 (copy).

2.2. Uexküll's doctrine of *umwelt* as a scientific cornerstone of the Third Reich?

Despite all the support, it became apparent at the beginning of 1935 that Uexküll's institute would be dissolved.¹⁷ Moreover, the Hamburg authorities made it unmistakably clear that Uexküll's continued employment beyond the winter semester of 1935/1936 was out of the question (Hünemörder 1979: 111–112).¹⁸

To fend off the imminent closing of his institute, Uexküll curried favour with the National Socialists. In a letter to the Reich Ministry of Science, Education, and Culture (*Reichministerium für Wissenschaft, Erziehung und Volksbildung*), dated 11 November 1935,¹⁹ he argued that the predominant mechanical world view in biology would be a constant source of danger for the Third Reich. According to Uexküll, the Russian ethologist Pavlov considerably fostered the mechanistic interpretation of biological processes with his doctrine that behavioural responses are elicited by external stimuli. Accordingly, Uexküll claims, Lenin and his successors, aware of the significance of Pavlov's doctrine for the mechanistically scientific foundation of the communist state, have continuously supported Pavlov. Thus, at the time of writing the letter, a third large institute is being built by the USSR for the 84-year-old researcher, who himself is not a Bolshevik. Uexküll continues by stating that for decades he has been acting as Pavlov's adversary in Germany. Accusing Pavlov of supporting the milieu theory of regarding animals as playthings of external physicochemical conditions, Uexküll, by contrast, stresses that in his view, an animal is a systematically organized and creative centre of its *umwelt*. Only a brain, he emphasizes, that has been created by the plan of internal life rhythm to which blood and race also belong, can cope with all the demands of life. Furthermore, he underlines that there is a major plan being acted out in nature and encompassing all organisms. On the other hand, because of his anti-Darwinian stance (Uexküll 1926: 129, 260–265, 1928: 102, 194–198; Brentari

¹⁷ Cf. Keeser to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 14 January 1935, HSA, 361-6_IV 2184, document no. 4 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 24 (copy)].

¹⁸ Hamburg's State Education Authority, University Division, to the Faculty of Medicine, [Hamburg], 17 October 1935, HSA, 361-6_IV 1059.

¹⁹ A copy of a letter from Uexküll to the R. K. M. (*Reichskultusministerium*), i.e. the Reich Ministry of Science, Education, and Culture, Hamburg, 11 November 1935, HSA, 364-13 Mat. Nat. 441312. The copy, dated 9 December 1935, was made in the dean's office of the Faculty of Mathematics and Natural Sciences and bears the note that the ministry received Uexküll's letter on 13 November 1935. The original of Uexküll's letter could not be found. The copy is incomplete at the end, but judging by the content, only a part of the last sentence and the salutation seem to be missing.

2015: 129–132), he regards the struggle for existence, “which is often detached as a partial phenomenon from the great rhythm of life and cited as evidence for the operation of blind chance”, merely as “a means which nature uses to bring its plans to fruition”. According to Uexküll, in animal states, we see best how the rhythm of life in its acting according to plan (“*Lebensrythmus [sic!] im planvollen Walten*”) exceeds the single subject and regulates the cooperation within states. However, the importance of the *Eigenleben* (‘proper life’) of peoples, races, and states was systematically destroyed, not least by the intrusion of mechanistic ideas of scientific biology into politics. At this point, Uexküll adds, the political work of the Third Reich set in. Finally, he expresses his belief that his doctrine and his institute are of the same importance to the Third Reich as Pavlov’s doctrine and institute are to the USSR.

Of course, the question arises whether Uexküll’s claim in this letter that his doctrine formed a fundamental support for the Third Reich was only a tactical manoeuvre and an exaggeration or whether it was his firm conviction. In the literature, there is a wide spectrum of different opinions on Uexküll’s relationship to National Socialism. Mainly based on Uexküll’s biography written by his wife Gudrun von Uexküll, Brentari (2015: 38–42) acquits Uexküll of any substantial link to or deeper sympathy with National Socialism. Heredia (2020: 29) speaks of an “ambivalent relationship with Nazism”, Michelini (2020: 1) of an “alleged link to National Socialist ideology”. Mildenberger emphasizes Uexküll’s rejection of racist ideology, which ascribes to human races different and innate traits, and declares him a “*profitierender Statist*” (Mildenberger 2002: 147), which in this context means a background actor profiting from political developments which he did not proactively support. Mildenberger and Herrmann (2014: 307–309) present Uexküll as having been on bad terms with the National Socialists. Sax and Klopfer (2001: 771) classify Uexküll as “a traditionalist, even further from Nazi populism than from liberal democracy”. In complete contrast, Sprenger (2021: 65–67, 86) claims that Uexküll’s doctrine of the umwelt enabled him to declare Jews as a race which had to be expelled without using typical antisemitic and racist stereotypes and that Uexküll’s image as an aristocrat opposed to National Socialism can no longer be maintained.

If Uexküll had any strong affinity for the Third Reich, it was based for the most part on his holistic and biologicistic view of states, which he compared to – or even considered (cf. Uexküll 1920b: 5) – living beings. According to Uexküll, the social position and profession of each individual are determined by the individual’s capabilities and umwelt, a position that the individual is not allowed to leave or change, as this would be against the planfully organized natural order (Uexküll 1920b: 19–28). Not surprisingly, Uexküll’s political attitude was

extremely anti-liberal and anti-democratic. Already in the first edition of his *Staatsbiologie* ('Biology of the state'), published in 1920, Uexküll counted the free press or the forming of unions of representatives of the same profession among various "illnesses" of a state, leading to the state's dissolution and foreboding the imminent downfall of the European states. Uexküll considers the "blindness of the people" (*Volksblindheit*) as the main evil inevitably causing a state's collapse. The states had been saved by the intervention of big business (*Großkapital*), but only temporarily, as the big capitalists themselves played on the "blindness of the people" to get their candidates elected. For Uexküll, the ideal state is governed by a monarch and officials who dedicate themselves exclusively to the state's interests, "how big the errors made in detail may be" (Uexküll 1920b: 40–49). The "monarch" can be a king, a president, or a prime minister (Uexküll 1920b: 23).

Uexküll signed the "Vow of allegiance of the Professors of the German Universities and High-Schools to Adolf Hitler and the National Socialistic State" (Nationalsozialistischer Lehrerbund 1933: 130). In the second edition of his *Staatsbiologie*, which appeared in 1933 after the so-called "seizure of power" by Hitler, Uexküll praises Hitler as having saved Germany from ruin (Uexküll 1933a: 71). According to Uexküll, democratic elections and government by majority decisions correspond to a body that is ruled by somatic cells and not by the brain, which implies madness (Uexküll 1933a: 67). Of particular interest are Uexküll's additions in the second edition of his *Staatsbiologie* concerning the role of "foreign races". As in the first edition of 1920, Uexküll declares that a foreign race (without explicitly naming any) does not entirely consist of "parasites", but only those members are parasites who are detrimental to the state, while the others, who are useful to the state, are "symbionts" (Uexküll 1920b: 49–50, 1933a: 72–73). Of course, every contemporary of Uexküll's will have in particular read 'Jews' into the term 'foreign race'. However, Uexküll does not unilaterally equate the members of foreign races with "parasites", but makes clear that there are both "parasites" and "symbionts" among them. In this specific respect, Uexküll's approach is individualistic, not collectivist, a fact consistently overlooked by Sprenger (2021).

In the additions to his *Staatsbiologie* of 1933, which are obviously addressed to the National Socialists, Uexküll argues against the inundation of a state's "organs" by a foreign race, expressing sympathy for any state's leader who curbs such flooding (Uexküll 1933a: 73). On the other hand, Uexküll clearly states that it is not certain that the absolute racial purity of a people is the prerequisite for the prosperity of a state. Quite the contrary, Uexküll continues, there is the danger that a people which consists only of uniform individuals cannot cope with the manifold demands of a modern state. Furthermore, it is not proven that individuals with mixed racial ancestry are automatically inferior (Uexküll 1933a:

73–75). Drawing on his biological ideas, Uexküll emphasizes that it is not the racial traits that constitute personality but the plan according to which these traits are combined, and that this plan is created anew for each human personality. Finally, Uexküll pleads for the Christian ideal of charity irrespective of the status or race of the person who needs one's help (Uexküll 1933a: 76). Thus, in this respect, Uexküll unequivocally rejected some core tenets of National Socialist racist ideology.

Moreover, he indirectly opposed the National Socialists' monopolization of Houston Stewart Chamberlain for their radical racist doctrine by stressing that his own account corresponds to Chamberlain's view in every detail (Uexküll 1933a: 76, fn. *). Similarly, in a letter to Eva Chamberlain, von Uexküll, bitterly deploring the persecution of world-famous German scholars by the Nazis, defended Chamberlain against National Socialist usurpation and interpretation of his thoughts, stating that Chamberlain regarded respect for the personality, be it Arian or Jewish, as the highest commandment (Uexküll, G. v. 1964: 171–173; Schmidt 1975: 127; Brentari 2015: 40–41). Already in his obituary for Chamberlain, Uexküll (1927: 183) had openly criticized Alfred Rosenberg's racist ideological interpretation of Chamberlain, "because modern racial theory, which is also supported by Rosenberg, does not do justice to Chamberlain's attitude towards the racial question". From the earliest beginnings of National Socialism, Rosenberg was one of its leading ideologists. According to Uexküll, it was not racial purity that Chamberlain had demanded from the Germans, but "purity of ideas". Uexküll also mentions that Chamberlain unequivocally stated that there were plenty of Jews representing this ideal. While admitting that Chamberlain hated the "Jewish idea as it manifests itself in the astute patriarchs of the Old Testament" from the bottom of his heart, Uexküll simultaneously emphasizes that Chamberlain has never been an anti-Semite in the popular sense (Uexküll 1927: 183).

Perhaps Uexküll knew better than any other person what his friend Chamberlain had actually thought; perhaps it was just wishful thinking. At the very least, what Uexküll wrote about Chamberlain was his private perception of him, that is, Chamberlain as he existed in Uexküll's umwelt. However, even though Chamberlain granted some Jews "nobility in the fullest sense of the word" ("*Adel im vollsten Sinne des Wortes*"; Chamberlain 1912: 324), the overall tenor of his book made it one of the most influential works of racist ideological antisemitism.

From his own antisemitism, which had blazed up after World War I (Mildenberger 2007: 108–111; Harrington 1996: 60, 62–63, 70), Uexküll began to distance himself in 1922 (Mildenberger 2007: 111; Mildenberger, Herrmann 2014: 294–296). When, in the autumn of 1933, Adolf von Bentheim, the chairman of the

Deutsche Adelsgenossenschaft (DAG, German Nobility Association), asked Uexküll to provide an Arian certificate for himself and his wife, whose mother was Jewish, Uexküll reacted by leaving the DAG and attacking von Bentheim, whom he accused of having violated the principle that nobility always was, and is, a matter of ethos (Mildenberger 2007: 158). Finally, he asked Bentheim whether he would have preferred that he, Uexküll, had married an “Arian barmaid from the Blue Angel (*Blauer Engel*),²⁰ whose ancestors, according to the church register, had worked since 1750 for the community in the village, sometimes as cowherds, sometimes as swineherds, perhaps also as night watchmen” (Mildenberger, Herrmann 2014: 308).

Besides, several times, Uexküll stood up for Jewish colleagues (Uexküll, G. v. 1964: 171–172). Brock, Uexküll’s successor, told the British military government after the war that Uexküll had allowed Jewish students to attend the institute as long as possible during the Third Reich.²¹ Of course, Brock’s statement could theoretically also be an *ex post facto* protective assertion. However, the account of Otto Kestner (until he changed his name in 1916, he was known as Cohnheim), a persecutee of the Nazi regime, weighs heavy. Kestner, who was appointed full professor of physiology at the University of Hamburg in 1919 and was forcibly emerited by the Nazis in 1934 because of his “non-Aryan” origins, was one of the driving forces behind Uexküll’s appointment as scientific assistant and honorary professor at the University of Hamburg in 1925 and the granting of a research institution to Uexküll (Hünemörder 1979: 110). According to Kestner, “Uexküll was a passionate opponent of the Nazis from the beginning and again and again emphasized that. If he had not been a baron and a famous scholar and, besides, old and ill, he would certainly have fared badly.”²²

Concerning Uexküll’s attitude towards the National Socialists, it is also worth mentioning that in a letter to Lothar Gottlieb Tiralá,²³ a convinced National

²⁰ Uexküll alludes here to the famous movie *Der blaue Engel* from 1930, with Marlene Dietrich acting as a honky-tonk dancer in a harbour music hall.

²¹ Brock, ‘Supplement of the Fragebogen: Military Government of Germany of 1. 1. 46’, Hamburg, 22 October 1946, p. 2, HSA, 361-6_IV 1247, vol. 1.

²² Kestner to Senator Landahl, Cambridge, 2 December 1946, HSA, 361-6_IV 1247, vol. 1.

²³ For Tiralá’s professional development, “one of the strangest medical careers that ever played out on German territory”, see Mildenberger 2004 (citation on p. 253). Tiralá’s appointment as professor of racial hygiene occurred against the resistance of the Medical Faculty of the University of Munich. Tiralá was dismissed in 1936, considered incompetent both in the field of research and teaching, and accused of having conducted abortions and hustling lecture fees. His attempts to regain his position by bringing into play his connections with the leading circles of National Socialism failed. Tiralá was heavily influenced by Uexküll’s teachings on nerve and tonus centres, which he applied in establishing a special breathing technique to heal blood pressure diseases.

Socialist, who was appointed Professor at the Institute of Racial Hygiene, University of Munich, in 1933, he not only vehemently criticized, but also mocked the National Socialist concepts of health policy based on racial hygiene. Eventually, Uexküll made the spread of materialism and Darwinism responsible for these trends (Uexküll, Gudrun v. 1964: 169–170; Brentari 2015: 39–40).

According to Gudrun von Uexküll (1964: 174–176), an open clash between Uexküll and the National Socialists happened on 3 May 1934, at the constituting session of the Committee on Philosophy of Law²⁴ of the Academy of German Law (*Ausschuss für Rechtsphilosophie der Akademie für Deutsches Recht*) at the Nietzsche House in Weimar. Uexküll, as reported by Gudrun von Uexküll, argued against the newly dominating rule of force, commonly accepted as a sign of fitness for life, pleading for protecting the universities, which he regarded as “eyes of the state”, from such attacks, as sense organs cannot simply hit back when they receive a punch.

Sprenger (2021: 73–86) heavily doubts Gudrun von Uexküll's account of her husband's resistance to the National Socialists' “purge” of the universities, mainly drawing on Uexküll's article “The universities as sense organs of the state”, which appeared in 1934. He points out that Uexküll (1934) declares democracy and the liberal era as the real dangers to universities, as in democracies people do not understand that a state is a living organism with universities being one type of its indispensable “organs”, namely its sense organs. As for typical reproaches and prejudices against universities, Uexküll mentions their alleged unworldliness, occupation with useless problems, use of a hermetic language, and failure to form Germany's youth into real men. By contrast, according to Uexküll, in a total state, the establishment of which is the declared aim of the National Socialists, the vital function of universities is recognized, and there is the insight that any “blind swiping” (*blindes Dreinhauen*) against universities would amount to fatal self-harm. Continuing this argumentation, Sprenger (2021: 83) concludes that Uexküll's article insinuates that the attacks by the National Socialists were not false in principle, but only because they were directed against the false target. However, when reading Uexküll's article, one does not get the impression that it corresponded to how the National Socialists wanted their “purging” of the universities, which involved bullying, persecuting, expelling, and eliminating professors, lecturers, and students for racist and/or political reasons, to be interpreted. Is it conceivable that the National Socialists liked to hear their actions being alluded to with the term ‘blind swiping’?

²⁴ See Wildenauer 2019 for a detailed account of this session.

However, there were also very disturbing remarks made by Uexküll concerning Jews. Although Mildenerger (2007: 175) states that Uexküll did not refrain from criticizing the racist antisemitism of the National Socialists in his autobiographic *Niegeschaute Welten* (first published in 1936) and that in the process of publication of this book there had been quarrels with the Ministry of Propaganda that lasted for months, the chapter on Russian Jews contains typical antisemitic stereotypes and treats Jews as if they were some kind of foreign bodies (Uexküll 1936: 157–167).

Mainly drawing on Uexküll's *Staatsbiologie* and his antisemitic spoutings in *Niegeschaute Welten*, Sprenger (2021: 65) finally concludes that Uexküll is the founder of a racism “which ascribes to each race its *umwelt*, calls for its separation and binds *umwelten* to geographical places while depriving some *umwelten* of their place and thus of both their biological possibility [*biologische Möglichkeit*] and political entitlement [*politische Berechtigung*]”. Furthermore, he states:

By formulating the properties of a parasite in the context of his *umwelt* theory and transferring these properties onto Jews, Uexküll can pay tribute to their *umwelt* and simultaneously describe them as people to be dispelled because of their lack of a place [*Ortlosigkeit*]. With this rhetorical trick, Uexküll supports the fascist policies of the regime without dirtying his own hands. (Sprenger 2021: 66)

In my view, these remarks by Sprenger constitute a serious misinterpretation. His conclusions stand and fall with his claim that Uexküll bound *umwelten* to geographical places and declared or insinuated that parasites such as Jews are without place (*ortlos*). First, notions such as *ortlos* (*‘without place’*) and *Ortlosigkeit* (*‘lack of a place’*) are not terms coined by Uexküll but by Sprenger interpreting Uexküll. Second, *umwelten* simply cannot be bound to geographical places, as the *umwelt* of an animal is what the animal perceives of its surrounding world and on what it has an effect through its actions. If a person moves from one place to another, he or she does not lose his or her sensations or the ability to act. Obviously, Sprenger confounds Uexküll's ideas of correlations between the social position of an individual and his or her *umwelt* with geographical positions. However, as Hermann Weber (1939a: 255), who commanded an excellent knowledge of Uexküll's *umwelt* theory, stressed, *umwelt* is no geographical notion. Furthermore, the more Sprenger tries to construct a direct path from Uexküll's *umwelt* theory to National Socialist ideology, the more he tends to omit the fact that Uexküll's concept of *umwelt* is individualistic, as each subject has his or her own *umwelt*. Incidentally, Uexküll's individualistic concept of the *umwelt* applies not only to human individuals, but also to animal individuals (Uexküll

1931; Bunke 2001: 131–132). As it has already been mentioned, drawing on his biological ideas Uexküll emphasizes that it is not the racial traits that constitute personality, but the plan according to which these traits are combined, and that this plan is created anew for each human personality (Uexküll 1933a: 76). Probably, for those who wanted to exploit Uexküll's theory for their racist ideological purposes, it seemed to be a small step to lump together all individuals of a "race", declaring them to be inferior and ascribing to that "race" *as a whole* its own umwelt. However, Weber knew that such an application of Uexküll's concepts to races as wholes was beyond what Uexküll had in mind. Weber's assessment is all the more important because he was a very well-informed critic of Uexküll's umwelt theory and doubtless an expert on it. In this context, compare Mildemberger and Herrmann's (2014: 216) commentary on Weber's (1939a: 246) account of the essentials of Uexküll's umwelt theory: "Such a concise and correct summary of Uexküll's doctrine of the umwelt has never been written down by Uexküll himself."

Weber was an early, fully convinced National Socialist who, in July 1942, explicitly approved of the "measures" taken against Jews (Klee 2005: 657). He extended Uexküll's doctrine to races, species, and populations (Weber 1939a: 251, 253–258, 1939b: 642–643), speaking of 'umwelten of the races' (*Umwelten der Rassen*) and 'racial umwelten' (*rassische Umwelten*), but he simultaneously emphasized (Weber 1939a: 251, 1939b: 642–643) that this extension constituted an essential difference between Uexküll's concept of the umwelt, which was related to a certain subject, and his own, much broader notion of the umwelt. Thus, the question arises as to what extent we are allowed to reproach Uexküll if others modify essential elements of his theory for their political purposes. As the examples discussed by Stella and Kleisner (2010) show, whenever it came to using the term 'umwelt' to propagate National Socialist ideology, it happened by either neglecting or ignoring Uexküll's subjectivist and individualistic concept of the umwelt and/or using this term – completely contrary to Uexküll's theory – as an expression for the outer world, the surroundings, which Uexküll had called '*Umgebung*'.

It is worthwhile considering further examples of how differently Uexküll and his umwelt theory were judged by some of his National Socialist contemporaries. Ernst Lehmann, the founder of the German Union of Biologists (*Deutscher Biologenverband*), published a positive review of Uexküll's *Staatsbiologie* in the National Socialist-oriented journal *Der Biologe* ("The biologist"). Lehmann (1934) did not mention Uexküll's umwelt theory but focused on rather generic aspects, such as the biological foundations of states. It does not seem that he saw any immediate or specific connection between Uexküll's umwelt theory and National Socialist ideology. Interestingly, another review, published anonymously (N. N. 1934), of

Uexküll's *Staatsbiologie* in the journal of the Reich Office for the Advancement of German Literature (*Reichsstelle zur Förderung des Deutschen Schrifttums*) is rather negative, concluding that Uexküll's book "unfortunately cannot be particularly recommended". Immediately afterwards, it is added that Uexküll, however, has edited Chamberlain's literary legacy, as if the reviewer had felt obliged to exculpate Uexküll. Furthermore, several exponents of National Socialist ideology, such as Hans F. K. Günther (racist ideology), Ernst Krieck (pedagogy), Karl Kötschau (medicine), and Theodor Haering (philosophy), suspected Uexküll of being a supporter of the "milieu theory" and that his doctrine of the *umwelt* was based on Marxist assumptions (Mildenberger 2007: 182). Walter Scheidt, professor of racial anthropology at the University of Hamburg, criticized Uexküll for having since the beginning deliberately excluded the problems connected with hereditary and racial research. In Scheidt's view, Uexküll's theory of the *umwelt* was nothing more than a continuation of the milieu theory of the liberalist era.²⁵ In this manner, he constructed an affinity between Uexküll's doctrine and the cultural and political spirit of the Weimar Republic, the antagonist and enemy image of National Socialism. Scheidt's accusations fit well with what Brock, Uexküll's successor, said to the British military government after the war about the situation of the Institute for *Umwelt* Research after the Nazis had seized power. According to Brock, the Institute's activities had aroused great suspicion because they had been associated with the milieu theory, which was to be suppressed in favour of race and heredity doctrines.²⁶

On the other hand, in complete contrast to Scheidt, Gustav Deuchler from the Institute of Psychology of the University of Hamburg emphasized that Uexküll's research was in strict opposition to the milieu theory and that Uexküll was perfectly right in declaring that the milieu theory approach belonged to the world view of Bolshevism, while the *umwelt* research approach belonged to the world view of National Socialism.²⁷ Evidently, Deuchler knew Uexküll's letter from 11 November 1935, as Uexküll did not speak of such an opposition in any of his publications. In his enthusiasm, Deuchler went so far as to claim that Uexküll's research direction was the only possible future for German biology.

²⁵ Scheidt to the dean of the Faculty of Philosophy, Hamburg, 20 January 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 34–36 (copy); see also Mildenberger 2007: 189.

²⁶ Brock, 'Supplement of the Fragebogen: Military Government of Germany of 1. 1. 46', Hamburg, 22 October 1946, p. 1, HSA, 361-6_IV 1247, vol. 1.

²⁷ Deuchler, Expert opinion on the Institute for *Umwelt* Research, Hamburg, 16 March 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 37–39 (copy); see also the quotation from Deuchler's letter in Harrington 1996: 235.

Politically motivated support for Uexküll also came from National Socialist students: Wolf Müller's commitment to Uexküll's institute on behalf of the National Socialist German Students' Union was mentioned in Section 2.1. Moreover, in December 1937, the student division of the National Socialist Party in East Prussia published excerpts of Uexküll's work and a picture of Uexküll on its propaganda leaflet. In a letter²⁸ to Uexküll, "Siegfried Drescher, head of the cultural division of the organization, explained that his group wished to use the writings of great German thinkers, scientists, and artists to inspire a young generation of National Socialistic students to realize contributions that the university might make to the regeneration of the German Volk" (Harrington 1996: 69). As Harrington (1996: 69) has pointed out, Uexküll "had almost certainly not solicited recognition of this sort". Nevertheless, he promptly sent a copy of the propaganda leaflet and Drescher's letter to the rector of the University of Hamburg.²⁹

Evidently, Uexküll's contemporaries were not unanimous in judging the relationship between his umwelt theory, i.e. its philosophical and political foundations and implications, and National Socialism. Some National Socialists felt inspired by it, others associated it with National Socialism's sworn enemies, such as liberalism and Marxism. However, it is not decisive whether these mutually exclusive interpretations of Uexküll's doctrine were "correct" or "false". What is essential is the fact that Uexküll's theory was perceived quite differently by his contemporaries, who could and/or wanted to read into his umwelt theory whatever they considered useful for their own political or other purposes. Also, Stella and Kleisner (2010: 49) conclude that the use of the term 'umwelt' by other authors than Uexküll is characterized by a "lack of precision" and a "nebulosity, [which] was often driven by ideological rather than scientific purposes".

Certainly, Uexküll was a declared adversary of democracy. He belonged to the large and politically multi-coloured army of democracy's enemies, doing his part as a prominent person to destabilize the Weimar Republic, and thus contributing to its downfall. On the other hand, in my view, there is not enough evidence that Uexküll was a clandestine or crypto-Nazi, as Schnödl and Sprenger (2021) suggest. Joseph Goebbels, later Reich Minister of Propaganda during the Third Reich and already in 1930 the second prominent National Socialist, wrote in his diaries (Goebbels 2008: 159) on 19 May 1930 that he failed in convincing Uexküll, whom he declared a "true white Jew", concluding that with Uexküll "every word

²⁸ NSDAP, *Gauleitung Ostpreußen* (District Administration East Prussia), *Amt: NSD-Studentenbund* (Office: National Socialist German Students' Union), Siegfried Drescher to Uexküll, Königsberg in Prussia, 10 December 1937, HSA, 361-6_IV 1059 (copy).

²⁹ Uexküll to the rector of the University of Hamburg, Hamburg, 21 December 1937, HSA, 361-6_IV 1059.

of enlightenment is useless". This is not astonishing, as, from the discussions in this section it has become clear that Uexküll would have preferred a regime where people with the same *umwelt* as his own play a decisive role, that is, where nobility, by birth and/or by conduct, rules, irrespective of the "race" to which the person belongs. Such an attitude is aptly designated by Wildenauer (2019)³⁰ as '*Adelsrassismus*', self-referential racism of those who consider themselves and each other as "noble".

Let us return to how Uexküll himself presented his doctrine in his letter to the Reich Ministry of Science, Education, and Culture dated 11 November 1935, in which he curried favour with the National Socialists, claiming that his doctrine was an antipode to Pavlov's mechanistic approach and that his institute was of the same importance to the Third Reich as Pavlov's doctrine and institute were to the USSR. First of all, we have to bear in mind that probably not only scientific (Mildenberger 2007: 79) but also private motives determined Uexküll's harsh rejection of Pavlov. Uexküll, as a representative of the German-Baltic nobility, was a natural opponent of Pavlov, who saw Baltic Germandom as a relic worthy of abolition (Mildenberger, Herrmann 2014: 286). After all, Uexküll had witnessed the Russification of the University of Dorpat as a student (Mildenberger 2007: 35), and in 1917 he had lost all his estates in Estonia through expropriation in the wake of the Russian Revolution (Brentari 2015: 31). It was certainly difficult for Uexküll to bear the fact that Pavlov was showered with privileges and funding from the Soviet government (Todes 1995) and celebrated internationally with his mechanistic approach, while he himself had his back against the wall.

As has already been mentioned at the beginning of this section, Uexküll's line of reasoning was as follows: (1) the predominant mechanical worldview in biology will be a constant source of danger for the Third Reich; (2) Pavlov's approach, having considerably fostered the mechanistic interpretation of biological processes, plays an important role in the ideological foundation of the Soviet Union; (3) Uexküll has acted for decades as Pavlov's adversary in Germany; (4) while Pavlov is a supporter of the (Marxist) milieu theory regarding animals as playthings of external physicochemical conditions, Uexküll's *umwelt* theory considers animals to be planfully organized, creating their subjective *umwelten*; (5) life rhythm's planful acting also occurs on a superindividual level, as can best be observed in animal states; (6) due to the intrusion of mechanistic biological concepts into politics, the importance of the *Eigenleben* ('proper life') of peoples, races, and states has been systematically destroyed, but the Third Reich has countered this process.

No official answer by the Reich Ministry of Science, Education, and Culture to Uexküll's letter has survived in the archives. As will become clear in Section

³⁰ Wildenauer 2019 was accessed at <https://entnazifiziert.com/teil-1-grundlegendendes-ueber-den-ausschuss-fuer-rechtsphilosophie-der-akademie-fuer-deutsches-recht/> on 13 August 2022.

2.6, the Third Reich supported Uexküll's research and saved his institute from being abolished, but evidently not for ideological but practical reasons, as Uexküll's umwelt theory could be applied to the training of guide dogs and other animals which could be deployed in a military or sanitary context. In his letter, too, Uexküll mentioned such practical benefits resulting from his umwelt theory. Significantly, Uexküll did not argue with concepts such as *umwelten* of races, as Weber would have done, since his concept is, as has been stated several times, individualistic. Concerning the superindividual level, such as peoples, races, and states and their *Eigenleben*, topics that were of special interest to the National Socialists, Uexküll refers to the 'planfully acting life rhythm'. It is doubtful whether the National Socialists will have been impressed by Uexküll's rather generic remarks and whether Uexküll himself was convinced of an *Eigenleben* of peoples, races, and states rather than simply using this expression as a tactical manoeuvre to motivate the Nazis to save his institute. It should not be forgotten that only two years earlier, in 1933, Uexküll (1933b: 115) had propagated quite the opposite view by vehemently arguing against any hypostatization or romanticization of the notion of 'Volk' ('people'), which amounted to a slap in the face of the National Socialists. Moreover, Uexküll's extremely reserved attitude towards the Darwinian idea of a struggle for existence, a central element of National Socialist racial ideology and propaganda (Weikart 2013), which he also expressed in his letter, will have met with little enthusiasm from his addressees.

It would be easy to consider Uexküll's letter, literally taken, as proof of Schnödl and Sprenger's hypothesis of a close ideological relationship between Uexküll and the National Socialists. However, in my view, all the other evidence discussed above, as well as the fact that Uexküll, when writing his letter, was driven by the desire to avert the imminent closure of his institute by all means, speak against such a conclusion. Another motive may have been that Uexküll wanted to defend himself against the quite common accusations that his umwelt theory was reminiscent of Marxist milieu theory.

2.3. Between all chairs: Expert opinions from three different faculties

First of all, the question arises of how Uexküll's colleagues in Hamburg reacted to his political and scientific statements as expressed in his letter to the Reich Ministry of Science, Education, and Culture dated 11 November 1935. Interestingly, Uexküll's claims provoked some sharp criticism not only from a biological but also from a political point of view.

Klatt, ordinary professor of zoology and dean of the Faculty of Mathematics and Natural Sciences from 1934 to 1938, underscored in a letter to the Hamburg botanist Winkler, dated 4 December 1935, that Uexküll's view of organisms as

planfully organized wholes was in no way singular, but a common opinion among zoologists and botanists.³¹ Furthermore, he saw no need to maintain a special institute for Uexküll's research field at a time when institutes that were by all means necessary for teaching were being kept only in a most provisional way. Klatt regarded the Institute for Umwelt Research as bound to Uexküll's person and therefore operational only as long as Uexküll was active as there was no apt successor who would possess Uexküll's originality.

In his immediate reply to Klatt's letter, Winkler³² agreed with Klatt that continuity of the institute after Uexküll's retirement could only be justified if an equal successor could be found, but there was none. In addition, Winkler strongly objected to Uexküll's claim that the mechanistic worldview was a danger to the Third Reich. To substantiate his protest, Winkler referred to the journal *Der Biologe* ('The biologist'), which had been co-edited by the late Bavarian Minister of Education Hans Schemm (1891–1935), implying that the journal with a clear National Socialist orientation contained mechanistically oriented biology articles. Indeed, Schemm regarded National Socialism as "politically applied biology" (Gissing 2003: 29),³³ while *Der Biologe*, founded in 1931 as the journal of the *Deutscher Biologenverband* (German Union of Biologists), functioned as an instrument of National Socialist biology (Gissing 2003: 58–110; Bäumer 1990).

Winkler did not stop at this point with his criticism of Uexküll's account of the mechanistic worldview as dangerous to the Third Reich but added that, *vice versa*, holding such a worldview as proposed by Uexküll did not automatically lead to an enthusiastic acceptance of the Third Reich, as could be seen from the example of Hans Driesch, who, although endorsing a worldview similar to Uexküll's, had taken quite the opposite stance in matters political. Driesch was, in fact, a republican, pacifist, cosmopolitan, and an outspoken opponent of the Nazi regime (Harrington 1996: 61, 188–193).

On 12 December 1935, Klatt sent a final statement in concordance with the Faculty's committee to the rector of the University of Hamburg.³⁴ His letter is a synthesis of his own and Winkler's remarks.

Of course, a statement was also made by the Faculty of Medicine, to which Uexküll's Institute still belonged at that time. First of all, the faculty defended Pavlov against Uexküll's accusations by pointing out that Pavlov, in contrast to

³¹ Unsigned letter to Winkler (from the context, it is clear that the sender was Dean Klatt), [Hamburg], 4 December 1935, HSA, 364-13 Mat. Nat. 441312 (carbon copy).

³² Winkler to Klatt, Hamburg, 6 December 1935, HSA, 364-13 Mat. Nat. 441312.

³³ Gissing 2003 is available at <https://miami.uni-muenster.de/Record/ddb6f8ca-25fd-4f7e-9003-92414fae15da>.

³⁴ Klatt to the rector of the University of Hamburg, Hamburg, 12 December 1935, HSA, 361-6_IV 1059 [also in HSA, 364-13 Mat. Nat. 441312 (carbon copy)].

Uexküll's claims, was an opponent of the mechanistic-Marxist worldview, made no secret of it, and was only kept in his current position because of his outstanding scientific importance.³⁵

Concerning the question of what should be done with the Institute for Umwelt Research, the Faculty of Medicine stated that the peculiarity of Uexküll's merits lay less in the originality of his basic attitude to biological problems than in the originality of the thoughts with which he illuminated these problems and in the direction of his work. Therefore, the Institute for Umwelt Research led by Uexküll stood and fell with the person of its director. In the opinion of the faculty, since no suitable successor had been found, after Uexküll's retirement the institute was to be transferred to a researcher who had special achievements in another border field and who consequently did not fit easily into the framework of the usual university institutes. For example, Franz Groebbels³⁶ could have been considered such a person.³⁷

The rector also turned to the anatomist Kurt Goerttler,³⁸ who had been appointed full professor at the University of Hamburg in March 1934, but had already moved to the University of Heidelberg in November 1935, and was thus both familiar with the Hamburg conditions as well as able to view the matter of the Institute for Umwelt Research from the outside.

In his expert opinion,³⁹ Goerttler complains about an increasing lack of institutes for theoretical biology in Germany compared to the Anglo-Saxon countries. Against this background, the preservation of the Institute for Umwelt

³⁵ Keeser, dean of the Faculty of Medicine, to the rector, 20 December 1935, HSA, 361-6_IV 1059 (carbon copy). Despite his at least initially harsh and blatant criticism of the regime, the Soviet leadership regarded Pavlov's research as a natural ally. Bukharin spoke in this context of a "weapon from the iron arsenal of materialism" (quoted from Rüting 2002: 165 in English translation). However, none of the political bigwigs had looked closely at Pavlov's research. Pavlov's arrangement with the powerful made him a wealthy dissident who was virtually showered with privileges and whose research was most generously supported by the Soviet state on both the personal and institutional levels. Impressed by the economic, technical, and military strengthening of his homeland, the patriot Pavlov eventually became a supporter of the Soviet state and "its great social experimenters" in the 1930s (Rüting 2002: 154-166, 214-222, citations on pp. 165 and 221; Todes 1995).

³⁶ Franz Groebbels (1888-1960) habilitated in physiology at the University of Hamburg in 1921, became an associate professor there in 1926, and worked as a senior physician at the Institute of Physiology at the University Medical Centre Hamburg-Eppendorf until his retirement in 1953. Groebbels' main field of research was ornithology (Gebhardt 1966).

³⁷ Keeser, dean of the Faculty of Medicine, to the rector, 20 December 1935, HSA, 361-6_IV 1059 (carbon copy).

³⁸ The rector to Kurt Goerttler, Hamburg, 23 December 1935, HSA, 361-6_IV 1059.

³⁹ Goerttler to the rector, 4 January 1936, HSA, 361-6_IV 1059.

Research itself seemed to him much more important than the continuation of the special working method founded by Uexküll. Because of the high reputation that Uexküll enjoyed at home and abroad, Goerttler advocated an indefinite extension of Uexküll's teaching assignment as long as he was in good health and able to direct his institute himself. Since no personality had emerged from Uexküll's school who could decisively promote Uexküll's work after him, Goerttler would have had no reservations had the Institute been made available to new men and tasks within the broader research field of general biology.

Given the precarious situation of his institute, Uexküll turned to the dean of the Faculty of Philosophy with the request to ask for expert opinions because, as he argued, the Institute for Umwelt Research was working in two fields of research, namely comparative physiology and animal psychology, and it was not a matter for the Faculty of Mathematics and Natural Sciences but for the Faculty of Philosophy to judge the animal psychological work.⁴⁰

The expert opinions of Scheidt and Deuchler from the Faculty of Philosophy were opposed to each other, not only concerning the interpretation of the political implications of Uexküll's umwelt theory (see Section 2.2), but also about the question of whether the Institute for Umwelt Research should be retained. Scheidt argued that the institute was completely tailored to Uexküll's person and that there was no worthy successor because none of the staff members who had been working at the institute for the past 10 years came even close to Uexküll's stature. Accordingly, he was against the preservation of the institute.⁴¹ In contrast, Deuchler refers to the groundbreaking animal psychological work conducted at Uexküll's institute and speaks unreservedly not only for its preservation but also for the expansion of the institute, noting that Uexküll had provided suitable young scientists.⁴² According to Matthes, dean of the Faculty of Philosophy, the majority of the faculty members were in favour of preserving the Institute for Umwelt Research in the debate on this matter.⁴³

⁴⁰ Uexküll to Walther Matthes, dean of the Faculty of Philosophy, Hamburg, 14 January 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 32–33 (copy).

⁴¹ Scheidt to the dean of the Faculty of Philosophy, Hamburg, 20 January 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 34–36 (copy).

⁴² Deuchler, expert opinion on the Institute for Umwelt Research, Hamburg, 16 March 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 37–39 (copy).

⁴³ Matthes to Hamburg's State Education Authority, University Division, Hamburg, 6 April 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 31.

After expert opinions had been obtained from three different faculties, the rector concluded that the institute was very much tailored to Uexküll's person and that it would hardly be possible to name successors of his standing. The institute should therefore continue only as long as Uexküll himself could lead the work.⁴⁴ For Uexküll, this meant, of course, that he had to present a suitable potential successor as soon as possible. At the beginning of 1936, he had thought of Konrad Lorenz as his possible successor.

According to a letter by Lorenz to Heinroth dated 8 January 1936, Uexküll had asked him by letter whether he would in principle be inclined to become his successor, which Lorenz, feeling deeply honoured, had affirmed. Lorenz planned to visit Uexküll's institute to see whether, for example, it would be possible to keep birds for research (Heinroth, Lorenz 1988: 206). In his reply, Heinroth informed Lorenz of the bureaucratic prerequisites for the appointment of an Austrian (Heinroth, Lorenz 1988: 211). It is not clear how these plans developed further. Mildenberger (2005: 422, 2007: 179) and Mildenberger and Herrmann (2014: 315) state that Uexküll's attempt to secure Lorenz as his successor failed the same year, as Lorenz was disappointed by the insecure funding and uncertain future of Uexküll's institute and would not have been interested in a seamless continuation of Uexküll's doctrine. However, there is no archival source for these statements.

Whatever the reasons may have been for no longer bringing Lorenz into play, for Uexküll now only his long-time assistant Friedrich Brock, who was fully in line with him scientifically, could come into question as a suitable successor.

2.4. Uexküll's advance to install his assistant Friedrich Brock as his successor

Friedrich Brock, Uexküll's assistant since the beginning of 1926, had studied natural sciences and philosophy in Leipzig, where he was strongly influenced by the well-known neovitalist Hans Driesch. During the preparation of his doctoral thesis at the Biological Research Institute on Helgoland and the Zoological Research Station in Naples, Brock came into contact with Uexküll's ideas and became an unconditional advocate of Uexküll's umwelt theory.⁴⁵ Brock's doctoral thesis (Brock 1926) on the behaviour of the hermit crab was based on Uexküll's concept of the functional cycle, specifically the functional cycle of food.

⁴⁴ Rector Rein to Hamburg's State Education Authority, University Division, [Hamburg], 27 June 1936, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 40.

⁴⁵ Cf. Brock's *curriculum vitae* in HSA, 361-6_IV 2184.

To foster Brock's career opportunities and to build up an appropriate successor, Uexküll tried hard to enable Brock's habilitation at the University of Hamburg.⁴⁶ However, the Faculty of Mathematics and Natural Sciences refused to habilitate Brock because there were already six lecturers in zoology,⁴⁷ and a corresponding application to the Faculty of Medicine⁴⁸ also seems to have come to nothing. Finally, Uexküll arranged the habilitation of Brock at the University of Kiel under the ordinary professor of zoology, Wolfgang von Buddenbrock, in May 1935 (title awarded on 6 November 1935).⁴⁹ Brock's habilitation thesis consisted of an experimental study on the carnivorous common whelk, *Buccinum undatum* L. (Brock 1936). Also, in other cases, Buddenbrock and later his successor, Adolf Remane, served as a safe haven for Uexküll's disciples who were regularly prevented from passing their doctoral examination in Hamburg (Hünemörder 1979: 115; Rüting 2004: 48).

In his letter to the Minister for Science, Education, and Culture, dated 17 November 1936, Brock repeated his application from August 1935 for a lectureship in "Zoology, Comparative Physiology, and Animal Psychology (Umwelt Research in J. von Uexküll's sense)" [*Zoologie, vergleichende Physiologie und Tierpsychologie*

⁴⁶ Uexküll to Hamburg's State Education Authority, University Division, for the attention of Prof. Rein, Virtsu (Estonia), 20 August 1934, HSA, 361-6_IV 1247, vol. 1 [also in HSA, 361-6_IV 2184, document no. 1 (copy), and in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 8 (carbon copy of a copy)]; Uexküll to the dean of the Faculty of Medicine (Keeser), Hamburg, 12 January 1935, HSA, 361-6_IV 2184, document no. 3 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 25 (copy)]; Keeser (dean of the Faculty of Medicine) to the dean of the Faculty of Mathematics and Natural Sciences (Klatt), Hamburg, 14 January 1935, HSA, 361-6_IV 2184, document no. 4 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 24 (copy)].

⁴⁷ Klatt to rector Rein, Hamburg, 6 November 1934, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 20 [also in HSA, 361-6_IV 2184, document no. 2 (carbon copy)]; see also Hamburg's State Education Authority, University Division, to the Institute for Umwelt Research, Hamburg, 7 November 1935, HSA, 361-6_IV 1247, vol. 1.

⁴⁸ Cf. Uexküll to the dean of the Faculty of Medicine, Hamburg, 12 January 1935, HSA, 361-6_IV 2184, document no. 3 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 25 (copy)].

⁴⁹ Uexküll to Hamburg's State Education Authority, University Division, Hamburg, 21 May 1935, HSA, 361-6_IV 1247, vol. 1; Brock to Hamburg's State Education Authority, University Division, Hamburg, 7 November 1935, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 28 [also in HSA, 361-6_IV 2184, document no. 5 (copy)]; Brock to Hamburg's State Education Authority, University Division, Hamburg, 18 November 1935, HSA, 361-6_IV 1247, vol. 1.

(*Umweltforschung im Sinne J. von Uexkülls*)].⁵⁰ As with Brock's habilitation, Klatt also objected to Brock's appointment as a lecturer, arguing that the requested lectureship was far too broad.⁵¹ Moreover, in Klatt's view, the term 'Comparative Physiology' was misleading since umwelt research was not what comparative physiology normally stood for, as stressed by Uexküll himself several times. Klatt did not mention any particular publication by Uexküll, but Uexküll 1933c could be an example. By the way, in 1947, the same controversy between Klatt and Brock about the term 'Comparative Physiology' reappeared (see Section 3).

Furthermore, Klatt pointed out that there were already enough lecturers for zoology. Finally, he made it clear that there was unanimity among the competent members of the Faculty of Mathematics and Natural Sciences concerning Brock's inadequacy as a successor to Uexküll, as he would only be able to apply Uexküll's thoughts and methods to other objects without adding anything fundamentally new and of major importance. Klatt recommended installing Brock's lectureship within the Faculty of Philosophy. However, the Faculty of Philosophy vehemently declined this proposal, as, first, Brock's field of research was a natural scientific one, and, second, the chair in psychology was vacant, so it was feared that by appointing private lecturers, the reoccupation of the chair would be endangered.⁵²

In a letter to the rector of the University of Hamburg, dated 15 December 1936, Uexküll vehemently advocated for Brock to be bestowed with a lectureship, mentioning several German biologists⁵³ and Dr E. S. Russell⁵⁴ from the Ministry

⁵⁰ Brock to the Minister for Science, Education, and Culture, Hamburg, 17 November 1936, HSA, 361-6_IV 2184, document no. 7 (copy). Brock's first letter, dated 14 August 1935, mentioned by him, has not survived in the archive.

⁵¹ Klatt to the rector, [Hamburg], 18 December 1936, HSA, 361-6_IV 2184 (carbon copy).

⁵² Matthes, dean of the Faculty of Philosophy, to the rector of the University of Hamburg, [Hamburg], 8 December 1936, HSA, 361-6_IV 2184 (carbon copy).

⁵³ Hans Driesch in Leipzig; Hermann Weber in Münster; Wulf Emmo Ankel, at the time *Privatdozent* in Gießen; Arthur Fleischmann in Erlangen. Fleischmann, originally a convinced Darwinist, had changed sides at the beginning of the 20th century and turned to vitalist reasoning (Mildenberger 2007: 52).

⁵⁴ In his article "Valence and attention in animal behaviour" of 1935, to which Uexküll referred, Russell praised Brock's well-known publication on the hermit crab (Brock 1927) as "perhaps the most striking and instructive example of the relativity of valence so far studied" (Russell 1935: 92). 'Valence' had originally been the translation of Lewin's (1926) term '*Aufforderungscharakter*', and Russell (1935: 91) proposed to extend its meaning in the sense that "any object or event in respect of which the animal manifests behaviour will be said to possess valence, to be valent". At first sight, one might assume that Russell's term 'valence' corresponds to what Uexküll had called the 'significance' ('*Bedeutung*') that the perception marks (*Merkmale*) in an animal's umwelt bear for the animal. However, Russell (1935: 91) explicitly rejected calling valence a significant or meaningful stimulus in order to avoid the teleological implications of the terms 'significance'

of Fishery in London, who had expressed very positive opinions about Brock's research.⁵⁵

Uexküll's letter was accompanied by three separate expert opinions, composed by Weber, Driesch, and von Buddenbrock (University of Halle). As expected, the assessment of Brock's qualifications by Driesch, under whom Brock had studied natural philosophy, was highly positive.⁵⁶ The same is true for the judgement of Buddenbrock, who was deeply impressed by the extensive knowledge in different fields of zoology that Brock had shown on the occasion of his habilitation procedure.⁵⁷

The most interesting statement comes from Hermann Weber, Professor of Zoology and Comparative Anatomy in Münster.⁵⁸ He considers Brock's work to be the most significant effort at translating Uexküll's ideas into practical biological research. Weber regards Brock's method, based on Uexküll's doctrine, as the only possible way of studying the psychology of "lower animals" on a purely biological basis without lapsing into illicit anthropomorphism.⁵⁹ Obviously, Weber wanted to do Uexküll and Brock a favour, because he abstained from critical remarks, while otherwise he was known as a critic of Uexküll's doctrine of the *umwelt* (Mildenberger 2007: 181–182). For instance, in his article (Weber 1937) in the influential journal *Die Naturwissenschaften* ('The natural sciences'), which appeared two months after his letter of recommendation to Uexküll, Weber, taking Brock's habilitation treatise (Brock 1936) as a starting point, meticulously analyses the characteristics of Uexküll's doctrine of the *umwelt* and Brock's application of this theory in comparison to other holistic doctrines, highlighting what he considers problems and shortcomings of the doctrine of the *umwelt* and arguing against Brock's criticism of common anatomy and physiology. Nevertheless, Weber is, by all means, constructive in his criticism and even makes proposals on how Uexküll's doctrine could be extended in a consequent and pure Uexküllian

and 'meaning'. Likewise, Russell (1935: 91–92) preferred not to speak of a stimulus, because a stimulus necessarily determines a physiological reaction, whereas "valence is relative to the animal's momentary psycho-biological state".

⁵⁵ Uexküll to the rector of the University of Hamburg, Adolf Rein, [Hamburg], 15 December 1936, HSA, 364-13 Mat. Nat. 441312 (carbon copy).

⁵⁶ A copy of a letter from Driesch, original addressee missing, Leipzig, 12 December 1936, HSA, 364-13 Mat. Nat. 441312.

⁵⁷ Buddenbrock to Uexküll, Halle a. S., 17 December 1936, HSA, 364-13 Mat. Nat. 441312 (copy).

⁵⁸ A copy of a letter from Hermann Weber, original addressee missing, Münster im Wald, 13 December 1936, HSA, 364-13 Mat. Nat. 441312.

⁵⁹ A copy of a letter from Hermann Weber, original addressee missing, Münster im Wald, 13 December 1936, HSA, 364-13 Mat. Nat. 441312, p. 2.

way to meet some of the objections raised against it. Weber concludes his article by stating – in a similar way as in his letter of recommendation two months earlier – that the doctrine of the umwelt is perhaps the only possible method of studying animal psychology in lower animals on a biological basis. Yet he added that whenever the doctrine of the umwelt goes further, raising the claim to serve as a foundation of an autonomous biology, it overestimates its possibilities.

Two other expert opinions, dating from February 1937, in favour of Uexküll's doctrine and recommending Brock as his successor, have been preserved in the files. Their focus lies on the practical aspects of Uexküll's doctrine of the umwelt. The first was written by Karl Max Schneider,⁶⁰ Director of the Zoological Garden in Leipzig. It is addressed to Carl Kronacher, whom Schneider asks to intercede for Uexküll's institute and its staff. Kronacher was president of the German Society for Animal Psychology (*Deutsche Gesellschaft für Tierpsychologie*), founded in 1936. Schneider points out the usefulness, particularly from a practical point of view, of Uexküll's non-anthropomorphic approach to understanding the behaviour of animals.⁶¹

The second expert opinion is a letter from Prof. Dr. H. Keller, president of the Society for Dog Research (*Gesellschaft für Hundeforschung*) and vice-director of the Institute of Psychology of the University of Berlin, to Prof. Dr. Konrad Meyer at the Reich Ministry of Science, Education, and Culture.⁶² Without going into further detail, Keller stresses the importance of Uexküll's doctrine for understanding the inner world (*Innenwelt*) of dogs and mentions the tight connections between the Society for Dog Research and the Ministry of War. This already foreshadows that political and military interests in Uexküll's research were to become decisive for the future of his institute (see Section 2.6).

In January 1937, the Political Disciplinary Community of the Faculties (*Politische Fachgemeinschaft der Fakultäten*) of the University of Hamburg reproached the Faculty of Mathematics and Natural Sciences for lacking the vision needed to realize the importance of the Institute for Umwelt Research (Mildenberger 2007: 189). The Political Disciplinary Community of the Faculties had been founded in 1933 on the initiative of rector Adolf Rein, a convinced National Socialist, who wanted to transform the University of Hamburg into a political university

⁶⁰ For Schneider, see Meier 2003, and Berg 2008: 211–214 (available at <https://docplayer.org/12795123-Britt-von-den-berg-die-neue-tierpsychologie.html>.)

⁶¹ Schneider to Kronacher, Leipzig, 18 February 1937, HSA, 364-13 Mat. Nat. 441312 (copy).

⁶² Keller to Mayer [misspelling for 'Meyer'], 18 February 1937, HSA, 364-13 Mat. Nat. 441312 (copy). Konrad Meyer (1901–1973) was director of the Department of Agricultural Science and General Biology (*Landbauwissenschaft und allgemeine Biologie*) of the Reich Research Council (*Reichsforschungsrat*). For Meyer, see Linne 2000: 123, and Becker 2002.

(Goede 2008). Paul Raethjen, Professor of Meteorology and dean of this new university board, stressed in his letter⁶³ to the rector the interdisciplinarity of umwelt research as a connecting link between the diverging natural sciences and the humanities. Concerning the delayed appointment of Brock as a lecturer, Raethjen criticizes that nobody on the Faculty of Mathematics and Natural Sciences' committee is sufficiently familiar with umwelt research. Consequently, Raethjen argues, Brock should only be rated by colleagues working in the same interdisciplinary field of research. Closing his letter, Raethjen declares that if it is impossible to maintain the Institute for Umwelt Research and its lectures, it does not make any sense to take up the cudgels for the idea of '*universitas*' (that is, interdisciplinarity). Not surprisingly, Klatt objected strongly to Raethjen's account, arguing that there was unanimity among the representatives of biology within the faculty's committee on this matter. Furthermore, if only colleagues working in the same field of research could be regarded as competent to assess Brock's qualities, then, given the idiosyncratic character of umwelt research, these would be either Uexküll and Brock themselves, or precisely zoologists and animal psychologists.⁶⁴

Given the refusal of the Faculty of Mathematics and Natural Sciences and the Faculty of Philosophy to accept Brock as a lecturer, and since Brock was habilitated in Kiel and the Institute for Umwelt Research would be maintained only as long as Uexküll was able to conduct scientific research, the rector, in his report to the Reich Minister for Science, Education, and Culture, submitted the proposal to see whether Brock could be placed at a scientific institution outside Hamburg as an assistant and lecturer.⁶⁵

For the Reich Minister, such a solution was out of the question, since Uexküll's work was unique and it would therefore be wrong to assign Brock to another position. On the other hand, denying a lectureship to Brock could not be justified. Therefore, on 31 March 1938, the Reich Minister announced his intention to grant Brock a lectureship at the Faculty of Mathematics and Natural Sciences in Hamburg. However, before doing so, a statement should be obtained from the faculty.⁶⁶ Of course, the faculty could hardly refuse the Reich Minister's request,

⁶³ Raethjen to the rector, [Hamburg], 12 January 1937, HSA, 361-6_IV 2184, sheets nos. 14–16 (carbon copy).

⁶⁴ Klatt to the rector, [Hamburg], 20 January 1937, HSA, 361-6_IV 2184 (carbon copy).

⁶⁵ Rein, rector of the University of Hamburg, to the Minister for Science, Education, and Culture, [Hamburg], 12 April 1937, HSA, 361-6_IV 1247, vol. 1 (carbon copy).

⁶⁶ The Minister for Science, Education, and Culture to the Reich Governor (*Reichsstatthalter*) in Hamburg, Berlin, 31 March 1938, HSA, 361-6_IV 1247, vol. 1.

even though Klatt again pointed out in his reply⁶⁷ that there already was a disproportionately large number of lecturers in zoology. It was decisive for the further fate of the institute that the faculty expressed its wish to the Reich Minister that the institute be incorporated into it (see the following section).

On 28 July 1938, Brock was awarded a 'Lectureship for Zoology, particularly Umwelt Research' (a formulation recommended by Klatt)⁶⁸ and was assigned to the Faculty of Mathematics and Natural Sciences.⁶⁹ As part of the amendment to the Reich habilitation regulations, which eliminated the original independence of private lecturers from the state (Mikoletzky 2016: 80), Brock was appointed a so-called 'lecturer of the new order' (*Dozent neuer Ordnung*) on 27 September 1939.⁷⁰ Having applied for the appointment as lecturer (*Dozent*) or supernumerary professor (*außerplanmäßiger Professor*), due to the Faculty's opposition (see the following section) Brock was only given the position of lecturer. As Brock stated in a letter dated 2 April 1940, to Dean Raethjen, the long prolongation of his appointment as a lecturer was due to Klatt's resistance as dean of the Faculty of Mathematics and Natural Sciences, whereas things changed for the better when Raethjen became dean.⁷¹

The Reich Minister for Science, Education, and Culture had thus enforced a lectureship for Brock about three years after Brock's first application. Uexküll's initiatives and activities to persuade policymakers to support his institute and Brock's application for a lectureship had proven fruitful. However, the integration of the Institute for Umwelt Research into the Faculty of Mathematics and Natural Sciences meant that Uexküll and Brock had to fear all the more for their scientific independence and the preservation of their research direction.

⁶⁷ Klatt to the Minister for Science, Education, and Culture via the rector, [Hamburg], 7 June 1938, HSA, 361-6_IV 1247, vol. 1 (carbon copy) [also in HSA, 361-6_IV 2184 (carbon copy), and in HSA, 113-5_B V 92 d UA 33 (carbon copy)].

⁶⁸ Klatt to the Minister for Science, Education, and Culture via the rector, [Hamburg], 7 June 1938, HAS, 361-6_IV 1247, vol. 1 (carbon copy) [also in HSA, 361-6_IV 2184 (carbon copy), and in HAS, 113-5_B V 92 d UA 33 (carbon copy)].

⁶⁹ The Reich Minister for Science, Education, and Culture to Brock, Berlin, 28 July 1938, HSA, 113-5_B V 92 d UA 33 [also in HSA, 361-6_IV 2184 (copy), and in HSA, 361-6_IV 1247, vol. 1 (carbon copy)].

⁷⁰ Brock to the dean of the Faculty of Mathematics and Natural Sciences, Raethjen, Hamburg, 30 May, 1939 (application for the appointment as a lecturer or extraordinary professor), HSA, 113-5_B V 92 d UA 33; Raethjen to the Reich Minister for Science, Education, and Culture, Hamburg, 19 June 1939 (recommendation to appoint Brock as a lecturer), HSA, 113-5_B V 92 d UA 33 (copy); the Reich Minister for Science, Education, and Culture to Brock, Berlin, 27 September 1939 (Brock's appointment as a lecturer), HSA, 113-5_B V 92 d UA 33; certificate of Brock's appointment as lecturer, Berlin, 27 September 1939, HSA, 113-5_B V 92 d UA 33 (copy).

⁷¹ Brock to Raethjen, Berlin-Spandau, 2 April 1940, HSA, 361-6_IV 2184.

2.5. Klatt's attack on Brock and the Institute for Umwelt Research

From June 1938⁷² on, the Faculty of Mathematics and Natural Sciences pursued incorporating the Institute for Umwelt Research. On 9 September 1938, the Reich Minister for Science, Education, and Culture gave his approval to this transfer,⁷³ and the Faculty of Medicine, to which the Institute originally belonged, agreed in January 1939.⁷⁴ However, as is revealed by archival material, the Faculty of Mathematics and Natural Sciences had no real interest in maintaining the Institute in its original Uexküllian orientation, but wanted to transform it into an Institute for Animal Psychology.⁷⁵ Uexküll and Brock protested strongly to the prorector of the University of Hamburg, Gundert, against the actions of the Faculty of Mathematics and Natural Sciences, which in their opinion were aimed at destroying the Institute for Umwelt Research or incorporating it into the Zoological Institute. Gundert further noted that Dean Raethjen had described the faculty's action in a personal conversation as a "crying injustice".⁷⁶ As explained in the previous section, Raethjen was a consistent supporter of the Institute for Umwelt Research and had already lobbied for the Institute on behalf of the Political Disciplinary Community of the Faculties.

The decisive driving force behind the faculty's manoeuvre was Klatt, the ordinary professor of zoology.⁷⁷ In March 1939, he wrote a letter⁷⁸ to several

⁷² Klatt to the Minister for Science, Education, and Culture via the rector, [Hamburg], 7 June 1938, HSA, 361-6_IV 1247, vol. 1 (carbon copy) [also in HSA, 361-6_IV 2184 (carbon copy), and in HSA, 113-5_B V 92 d UA 33 (carbon copy)]; see also Raethjen to Hamburg's State Administration, University Division, [Hamburg], 13 December 1938, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 57 [also in HSA, 364-13 Mat. Nat. 441312 (carbon copy)].

⁷³ The Reich Minister for Science, Education, and Culture to the Reich Governor in Hamburg, Berlin, 9 September 1938, HSA, 361-5 II_A d 32, sheet no. 9.

⁷⁴ Peter Mühlens, dean of the Faculty of Medicine, to the rector, Hamburg, 20 January 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 59.

⁷⁵ The dean of the Faculty of Mathematics and Natural Sciences (signed *per pro.* by Vice Dean Koch) to Hamburg's State Administration, University Division, via the rector, 21 November 1939, HSA, 364-13 Mat. Nat. 441312 (copy) [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947) (copy)].

⁷⁶ Handwritten file note, signed 'G' (in all likelihood, this stands for Prorector Gundert), 16 December 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947).

⁷⁷ See also Klatt's own account of these events eight years later stating that it was his proposal to transform the Institute for Umwelt Research into an institute for animal psychology and to hold an official process of appointing its future director (Klatt to the Faculty of Mathematics and Natural Sciences, [Hamburg], 30 June 1947, HSA, 364-13 Mat. Nat. 441312).

⁷⁸ Klatt to colleagues, Hamburg, 6 March 1939, HSA, 364-13 Mat. Nat. 441312 (carbon copy).

colleagues in Germany concerning the question of who should succeed Uexküll as director of the Institute for Umwelt Research. Klatt argues that, if the focus lies on the natural science aspects of Uexküll's doctrine, Uexküll's approach is one of many different zoological fields of research, neither more nor less important than any other. Moreover, he points out that the doctrine of the umwelt (*Umweltlehre*) is neither alien to nor declined by leading zoologists. In particular, many works on sensory physiology and animal psychology are to be counted, according to Klatt, as contributions to the doctrine of the umwelt. Rejecting Uexküll's view that Brock is the only candidate sufficiently qualified to succeed him, Klatt asks his addressees to give their statements on (1) whether it is necessary or desirable to maintain the Institute for Umwelt Research exclusively in the sense of von Uexküll's doctrine; (2) whether it is possible to maintain the characteristic features of the institute and its field of research under a director other than Brock; and (3) Brock's significance as a scientist. Unfortunately, these statements – Klatt mentions letters from (Friedrich) Alverdes, (Karl) von Frisch, (Jürgen Wilhelm) Harms, (Otto) Koehler,⁷⁹ (Paul) Krüger, and (Alfred) Kühn⁸⁰ – have not survived in the files. This is all the more regrettable as the selection of the addressees was Klatt's personal choice.

As Klatt later put it, he was not acting on behalf of the faculty but was addressing the reviewers for his personal information.⁸¹ None of the zoologists contacted were on the list of eight potential referees suggested by Uexküll on 7 March 1939,⁸² on request from Dean Raethjen. There is some evidence that Klatt was hostile towards Uexküll's doctrine (see below). Moreover, in a letter to the dean dated 19 July 1939, Uexküll declared that Hamburg's zoologists had done everything to undermine his position and destroy his institute.⁸³ Therefore, Klatt's choice of experts was probably negatively biased. Indeed, there are several indications that the expert opinions were unfavourable towards umwelt research, Brock, and the institute. Eight years later, Klatt summarized retrospectively that the referees did not find Brock sufficiently qualified to become Uexküll's

⁷⁹ In the letter written as 'Köhler'.

⁸⁰ Klatt to Dean Raethjen, Hamburg, 24 April 1939, HSA, 364-13 Mat. Nat. 441312; see also Raethjen's letter to the members of the commission for consultation on the future of the Institute for Umwelt Research, Hamburg, 19 June 1939, HSA, 364-13 Mat. Nat. 441312, p. 2 (list of experts contacted by Klatt).

⁸¹ Klatt to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 29 July 1941, HSA, 361-6_IV 2184.

⁸² Uexküll to Dean Raethjen, Hamburg, 7 March 1939, HSA, 364-13 Mat. Nat. 441312.

⁸³ Uexküll to 'Euer Spectabilität', i.e. to the dean of the Faculty of Mathematics and Natural Sciences, Virtsu (Estonia), 19 July 1939, p. 5, HSA, 364-13 Mat. Nat. 441312 [also in HSA, 361-6_IV 2184 (transcript of Uexküll's handwritten letter)].

successor.⁸⁴ At around the same time, Brock described Kühn and Koehler as his opponents and pointed out that Uexküll had, again and again, declared, orally and in written form, that Klatt wanted to destroy the Institute for Umwelt Research by all means.⁸⁵

There are also some indications of the attitude towards Uexküll's doctrine that might have been expected from the other referees contacted by Klatt, that is, Alverdes, von Frisch, Harms, and Krüger. As is well known, von Frisch completely ignored Uexküll's doctrine of the *umwelt* (Mildenberger 2007: 215, n. 3; Mildenberger, Herrmann 2014: 300), while Alverdes exploited it to propagate his own biologically and politically motivated holism, stating that living beings together with their *umwelten* form innate superindividual wholes (Alverdes 1932: 116, 1935: 59). Concerning Krüger's expert opinion, Uexküll declared in a biting and derogatory comment, but without going into further detail, that the colleague in Heidelberg had not understood the question at all.⁸⁶ Unfortunately, we have no statements by Uexküll on the expert opinions of the other evaluators contacted by Klatt.

On 23 March 1939, Brock was appointed provisional director of the Institute for Umwelt Research.⁸⁷ As doubts had been raised within the Faculty on the part of the disciplines of Botany and Zoology against appointing Brock as a supernumerary professor, experts were asked for their advice on the future of the Institute for Umwelt Research, Brock's qualifications, and potential successors of Uexküll other than Brock.⁸⁸ Following a proposal by Uexküll,⁸⁹ on 25 April 1939, statements were asked from Driesch, Weber, Buddenbrock, Karl Max Schneider (director of the Zoological Garden in Leipzig), Richard Hesse (former director

⁸⁴ Klatt to the Faculty of Mathematics and Natural Sciences, [Hamburg], 30 June 1947, HSA, 364-13 Mat. Nat. 441312.

⁸⁵ Brock to Heckmann, dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 16 July 1947, HSA, 364-13 Mat. Nat. 441312.

⁸⁶ Uexküll to '*Euer Spectabilität*', i.e. to the dean of the Faculty of Mathematics and Natural Sciences, Virtsu (Estonia), 19 July 1939, p. 4, HSA, 364-13 Mat. Nat. 441312 [also in HSA, 361-6_IV 2184 (transcript of Uexküll's handwritten letter)].

⁸⁷ Hamburg's State Administration, University Division, to Brock, [Hamburg], 23 March 1939, HSA, 364-13 Mat. Nat. 441312 (copy) [also in HSA, 361-5 II_A d 32, sheet no. 16 (copy), and in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 65 (carbon copy)]; see also Hamburg's State Administration to the Reich Minister for Science, Education, and Culture, [Hamburg], 23 March 1939, HSA, 361-5 II_A d 32, sheet no. 15 (carbon copy) [also in HSA, 113-5_B V 92 d UA 33 (carbon copy)].

⁸⁸ Dean of the Faculty of Mathematics and Natural Sciences, addressee not named, Hamburg, 25 April 1939, HSA, 364-13 Mat. Nat. 441312.

⁸⁹ Uexküll to Dean Raethjen, Hamburg, 7 March 1939, HSA, 364-13 Mat. Nat. 441312.

of the Zoological Institute in Berlin), Heini Hediger (director of the Zoological Garden in Bern), Brückner (officer for the Canine Sector in the Reich War Ministry), Konrad Meyer,⁹⁰ and Paul Schulze (Rostock), the latter missing from Uexküll's proposal list.⁹¹

A very negative judgement on Brock was rendered by Paul Schulze, the ordinary professor of zoology at the University of Rostock, characterizing Brock as arrogant and proposing Werner Fischel and the arachnologist Hans Peters as potential successors of Uexküll.⁹² Schulze thought that both researchers, while not working along entirely Uexküllian lines, would probably adjust themselves to the research direction of Uexküll's institute. It is doubtful whether Schulze was right in his assessment of Peters, as Peters had not mentioned either Uexküll or his umwelt theory a single time in his experimental studies on how the cross spider (*Araneus diadematus* Cl.) captures prey (Peters 1931, 1933a), weaves its net (Peters 1933b, 1937a, 1937b) and orients itself in its net (Peters 1932), although there would have been many opportunities to do so. As regards Fischel, there was some correspondence between his and Uexküll's approaches.⁹³

⁹⁰ For Konrad Meyer, see above, n. 60.

⁹¹ See the list in Raethjen's letter to the members of the commission for consultation on the future of the Institute for Umwelt Research, Hamburg, 19 June 1939, HSA, 364-13 Mat. Nat. 441312, p. 2.

⁹² Schulze to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Rostock, 4 May 1939, HSA, 364-13 Mat. Nat. 441312.

⁹³ Werner Fischel (1900–1977) was, from April 1935 to September 1941, director of the Research Centre for Animal Psychology (*Forschungsstelle für Tierpsychologie*) at the University of Münster (https://research.uni-leipzig.de/agintern/CPL/PDF/Fischel_Werner.pdf). From 1935 to 1939, he had a scholarship from the German Research Foundation (*Deutsche Forschungsgemeinschaft*) for his research on affect and memory in vertebrates (*Affekt und Gedächtnis bei Wirbeltieren*) (Deichmann 1995: 134). In the preceding years, from October 1930 to September 1934, Fischel had been scientific assistant to Frederik Buytendijk at the University of Groningen. Buytendijk was a strong supporter of Uexküll's concept of the umwelt and borrowed heavily from him in his own doctrine of an indispensable connection between animals and their umwelten, describing an animal as “being born with and in its umwelt” (Buytendijk 1929: 38; Gruevska 2019). For Buytendijk, animals were psychophysically constituted units in which the psychic expresses itself through the physical (Gruevska 2019: 345). His disciple Fischel focused his research on the affects and the emotional lives of animals. Following Schulze (1933) and in contrast to Heinroth and Lorenz, Fischel argued for a strict distinction between drive (*Trieb*) and instinct (i.e. instinctive action), as he saw an animal's affects as the true causes of its actions (Fischel 1937: 66–67). For Fischel, an affect, such as a drive, is the impulse for an action, while an instinct describes the action's form. In vertebrates, Fischel (1937: 68) distinguished two types of affects: drives, which are more undifferentiated, and emotions in the narrower sense, which are more sophisticated. According to Mildemberger and Herrmann (2014: 303), Fischel spent a year in Hamburg at Uexküll's Institute. However,

Apart from his harsh criticism of Brock, Schulze pleaded for the preservation of the Institute for Umwelt Research with its original research orientation, as did Driesch, Schneider, Hediger, and Buddenbrock. Weber, too, admitting that he had received many suggestions from Uexküll's doctrine, advocated preserving the institute. Yet, not surprisingly, he argued for further development of Uexküll's doctrine and was cautiously optimistic that Brock would be able to achieve this.⁹⁴ Driesch, Schneider, and Hediger considered Brock unconditionally apt to succeed Uexküll and continue his field of research.⁹⁵ Apart from Brock, Driesch also mentioned Buddenbrock as a potential successor but knew that this proposal would be unrealistic as Buddenbrock had already been an Ordinary Professor for a long time. Meyer abstained from assessing Brock because he felt incompetent

they provide no reference, and in Fischel's *curriculum vitae* (https://research.uni-leipzig.de/agintern/CPL/PDF/Fischel_Werner.pdf) there is no mention of such a research stay in Hamburg. Fischel (1938) adopted Uexküll's notion of the *umwelt*, but it is striking that in his sketch of the history of ethology (Fischel 1938: 2–9) he does not mention Uexküll. Moreover, Uexküll's doctrine is only treated as one of many different approaches. A possible interface between Uexküll and Fischel might have been Uexküll's concept of 'tone' ('*Tönung*' or '*Ton*'), according to which one and the same object can have different tones, i.e. meanings, for the same animal depending on its actual needs and moods (*Stimmungen*). Fischel claims that Uexküll has not stated whether he considers tone to be an affective factor (*Affektfaktor*). This is astonishing, as Uexküll definitely speaks of an animal's different moods, according to which an object changes its meaning for the animal. The classic example is, of course, the hermit crab, for which a sea anemone can either take on a 'dwelling tone' ('*Wohnton*'), if the crab does not yet have a sea-snail shell to dwell in, or a 'protection tone' ('*Schutzton*'), if the crab is already in possession of a shell, so that it can use the sea anemone to stick on its shell as a means of defence against squids, or eventually, a 'feeding tone' ('*Nahrungston*'), if the crab disposing of a shell and enough sea anemones stuck on it is hungry (Uexküll, Kriszat 1934: 54–55; Uexküll 2010: 92–93).

On 1 September 1941, Fischel became *Privatdozent* for Animal Psychology at the University of Leipzig. The faculty achieved Fischel's appointment by putting forward, among other arguments, that in January 1941 the Supreme Command of the Army had declared its explicit interest in theoretical and applied research in the field of animal psychology at German universities (Geuter 1984: 424).

⁹⁴ Weber to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Münster (Westfalen), 28 April 1939, HSA, 364-13 Mat. Nat. 441312.

⁹⁵ Driesch to the deanship of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Leipzig, 27 April 1939, HSA, 364-13 Mat. Nat. 441312; Schneider to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Leipzig, 28 April 1939, HSA, 364-13 Mat. Nat. 441312; Hediger to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Bern, 29 April 1939, HSA, 364-13 Mat. Nat. 441312.

to do so.⁹⁶ He mentioned the ecologist Karl Friederichs in Rostock as a potential successor of Uexküll, admitting that Friederichs would not be engaging in umwelt research in the Uexküllian sense. Meyer's assessment of Friederichs was correct, as Friederichs had no particular research interest in Uexküll's individualistic, subject-oriented, and psychological concept of the umwelt, which was, in addition, not applicable to plants. Friederichs's (1937) focus was on the relationships between species (plants and animals) in an area and on their interactions with the abiotic environment. Accordingly, he used the term 'umwelt' not in its true Uexküllian sense but to denote what Uexküll called '*Umgebung*', that is, the environment or the surroundings (Stella, Kleisner 2010: 42–43), whereas he applied the term '*Eigenwelt*'⁹⁷ to denote what Uexküll had called '*Umwelt*' (Friederichs 1937: 9, 24). It should also be mentioned that Friederichs pointed out the political implications of his research direction by propagating ecology as a "doctrine of blood and soil" (Friederichs 1937: 79, 91) in an intentional allusion to National Socialist policy and ideology (Deichmann 1995: 136–138).

Richard Hesse, emeritus director of the Zoological Institute at the University of Berlin, while making clear that he did not agree with all the methods and principles of Uexküll's umwelt research, admitted that he owed many fine suggestions to this doctrine. He pointed out that, in principle, Uexküll's umwelt research could be pursued in any zoological institute, but to be viable it had to be powerfully represented by a scholar, a prerequisite not met at the zoological institutes of his time.⁹⁸ Furthermore, while not knowing of any other scientists who could succeed Uexküll except for Brock, he clearly states that Brock will not be able to fully replace Uexküll, as he lacks the latter's ingenuity and originality.

⁹⁶ Meyer to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Berlin-Dahlem, 1 June 1939, HSA, 364-13 Mat. Nat. 441312.

⁹⁷ Almost simultaneously with Friederichs, Hans Petersen (1937) proposed using the term '*Eigenwelt*' ('own world') to denote what Uexküll had called '*Umwelt*', because the term '*Umwelt*' in everyday language meant 'surroundings' or 'environment', leading to misunderstandings. Hans Petersen sought to demonstrate that Uexküll's umwelt theory played a key role in understanding the biological roots of human culture (Petersen 1928, 1937). Both Friederichs and Petersen do not seem to have noticed Uexküll's own usage of the term '*Eigenwelt*' with a meaning different from '*Umwelt*'. According to Uexküll, in the central nervous systems of the higher animals, a 'mirror world' ('*Spiegelwelt*') or an '*Eigenwelt*' (the two expressions are synonymous) is formed, which he calls '*Gegenwelt*' ('opposite world'). This *Gegenwelt* consists of schemata representing the objects of an animal's umwelt and functioning as "the brain's instruments, always ready to react to suitable stimuli of the outer world" ("*Werkzeuge des Gehirns, die immer bereitliegen, um auf passende Reize der Außenwelt in Tätigkeit zu treten*") (Uexküll 1909: 195).

⁹⁸ Hesse to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Berlin-Frohnau, 28 April 1939, HSA, 364-13 Mat. Nat. 441312.

Buddenbrock arrived at a similar conclusion concerning Brock, stating that Brock had mastered Uexküll's methods but did not possess his genius so there was a danger that he would dilute the whole research field. As an alternative successor, he recommends Konrad Lorenz, "whom many people consider a genius and who drew a lot on Uexküll's teachings".⁹⁹ Indeed, Lorenz had borrowed from Uexküll the concept of '*Kumpan*' ('companion', 'buddy') and the notion of the schema, which formed the groundwork for the later development of Lorenz's 'innate releasing mechanism' ('*angeborenes auslösendes Schema*') (Lorenz 1935). However, Uexküll's vitalistic and teleological approach, as well as his anti-Darwinism, was unacceptable for Lorenz, who later went so far as to call Uexküll the "vitalist of the vitalists" and an "actual enemy of natural research" in a lecture manuscript dated 29 October 1948, due to Uexküll's individualistic, quasimonadological concept of the personal *umwelt* of each human being (Mildenberger 2007: 216). It was already mentioned in Section 2.3 above that Uexküll thought of Lorenz as his possible successor in early 1936, but that these plans had come to nothing.

What is also interesting is Buddenbrock's assessment of the situation in Hamburg. Arguing that Uexküll's importance had not been properly acknowledged in Hamburg's professional circles, Buddenbrock explicitly mentions Klatt, claiming that Klatt's negative attitude has reached the level of impoliteness.¹⁰⁰ Klatt felt that he had been treated unfairly by Buddenbrock and called on him to furnish proof of his contention, while Buddenbrock ignored Klatt's letters and turned to the dean,¹⁰¹ who asked Klatt to differentiate between his personal affairs and those of the faculty.¹⁰²

2.6. Intervention by the authorities of the Third Reich in favour of Brock and the Institute for Umwelt Research for military reasons

The decisive initiative for preserving Uexküll's institute and establishing Brock as his successor came from the army. Among those who were asked for their opinion on Uexküll's institute and Brock was also a certain Dr Brückner, who held a post in the Supreme Command of the Army (OKH, *Oberkommando des Heeres*). Brückner mentioned that since his time as a student he had concerned himself with the problems of *umwelt* research in the sense of Uexküll's 'biology of

⁹⁹ Buddenbrock to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Halle, 5 May 1939, HSA, 364-13 Mat. Nat. 441312.

¹⁰⁰ Klatt to [Buddenbrock], Hamburg, 22 August 1939, 364-13 Mat. Nat. 441312.

¹⁰¹ Buddenbrock to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Neapel (Naples), 24 August 1939, HSA, 364-13 Mat. Nat. 441312.

¹⁰² Raethjen (signed 'R') to Klatt, 31 August 1939, HSA, 364-13 Mat. Nat. 441312.

planfulness' (*Planbiologie*).¹⁰³ He emphasized that in the preceding years both the Supreme Command of the Army and the Ministry for the Interior had pleaded in petitions to the Ministry for Science, Education, and Culture and at a session with State Minister Wacker for preserving and securing Uexküll's institute. Brückner considered dogs, pigeons, and falcons important for the state, as they were useful and could also be deployed for military purposes. As the applicability of these animals depended on their biological properties, especially their psychological structure, argued Brückner, it was impossible, without knowing these biological traits, to develop sufficient and practical operational methods which a large number of "average people" could learn fast and easily and apply safely under serious circumstances.

Brückner emphasized research by Uexküll and his colleagues, which had contributed remarkably to the use of dogs as air raid protection alarm dogs, tracker dogs, guide dogs, and falconry dogs, and to the use of falcons not only for hunting but also for purposes of national defence. According to Brückner, the Institute for Umwelt Research had received considerable funds from the Reich for its research. Of course, Brückner was interested in the continuity of Uexküll's institute and keeping its field of research as close as possible to the orientation of its founding father, so he absolutely pleaded for Brock as Uexküll's successor. Three days later, Brückner confirmed again the army's strong interest in Uexküllian-style research on dogs, carrier pigeons, and birds of prey.¹⁰⁴ He assured the dean that material and formal support would be provided so that the institute and its research orientation would survive. Naturally, direct funding of the institute by the Supreme Command of the Army was excluded for formal and juridical reasons.

The German Research Foundation (*Deutsche Forschungsgemeinschaft*, DFG) and the Reich Research Council (*Reichsforschungsrat*) had funded Uexküll and his institute with 3,700 Reichsmark from 1934 to 1939 and with 425 Reichsmark from 1940 to 1945 (research during the war) (Deichmann 1995: 83). As can be deduced from Deichmann's (1995: 80–83) table, in the category of animal physiology (except developmental physiology), under which these funds fell, the average amount granted to researchers in Germany was 2,406 Reichsmark for the period of 1934 to 1939 and 7,580 Reichsmark from 1940 to 1945. Thus, the Reich's funding for the Institute for Umwelt Research was above the average for the first

¹⁰³ Senior civil servant (*Regierungsrat*) Dr Brückner from the Supreme Command of the Army to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Berlin-Neutempelhof, 8 May 1939, HSA, 364-13 Mat. Nat. 441312.

¹⁰⁴ Brückner from the Supreme Command of the Army to the dean of the Faculty of Mathematics and Natural Sciences of the University of Hamburg, Berlin-Neutempelhof, 11 May 1939, HSA, 364-13 Mat. Nat. 441312.

period but way below the average for the second period. Moreover, one has to bear in mind that the total of grants (153,500 Reichsmark) provided for animal physiologists from 1934 to 1945 amounted to only about 7.7 percent of the total funds for zoological research (2,004,764 Reichsmark).

According to the database of projects funded by the German Research Foundation, all of Uexküll's seven applications for research grants during the Third Reich were approved.¹⁰⁵ Besides, two scholarships¹⁰⁶ were granted to Heinz Brüll, a specialist on birds of prey working at Uexküll's institute from 1932 to 1939 (Mildenberger 2007: 168–169). The research subjects funded were mainly studies on dogs and their language, on the companion relationship (*'Kumpfanverhältnis'*) between hounds and birds of falconry (Brüll), and the training of guide dogs for blind war veterans. In addition, Friedrich Brock received research grants from the DFG from 1938 to 1942 and in 1944 for "Studies on the olfactory performance of the dog with special consideration of urine excretion as a means of communication in the canine world".¹⁰⁷ During the war, when Brock was doing military service and was assigned to the Army School of Dog and Carrier Pigeon Service (see Section 2.6), Emilie Kiep-Altenloh, who was appointed the Head of the Institute in 1941 as Brock's deputy,¹⁰⁸ conducted these investigations.¹⁰⁹ Kiep-Altenloh also worked on the project "Attempts to improve and shorten the training of guide dogs for the blind", which was approved by the DFG in 1943.¹¹⁰

In summer 1939, Brock contacted State Secretary Ahrens,¹¹¹ President of Hamburg's State Administration, who later would turn out to be decisive for the further fate of the Institute for Umwelt Research.¹¹² Brock argued that the director of the institute should hold the position of supernumerary professor. Furthermore, the director should have significant influence on promotion procedures in which doctorate candidates have composed their doctoral theses at the institute, as candidates had traditionally gone to the University of Kiel to pass their zoology doctorate exam. In addition, Brock applied for an improvement of the Institute's

¹⁰⁵ <https://www.gepris-historisch.dfg.de/person/5112618?> (retrieved on 13 August 2022).

¹⁰⁶ <https://www.gepris-historisch.dfg.de/person/5101532?> (retrieved on 13 August 2022).

¹⁰⁷ <https://www.gepris-historisch.dfg.de/person/5101478?> (retrieved on 13 August 2022).

¹⁰⁸ Brock to Hamburg's State Administration, Hamburg, 24 March 1943, HSA, 361-6_IV 0493.

¹⁰⁹ Kiep-Altenloh to Wolff, rector of the University of Hamburg, Hamburg, 11 August 1945, attachment: Activity report of the Institute for Umwelt Research, p. 1, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 104–106.

¹¹⁰ <https://www.gepris-historisch.dfg.de/fall/105018?> (retrieved on 16 August 2022).

¹¹¹ For Georg Ahrens, see Lohalm 2005: 135–136.

¹¹² Brock to Ahrens, Hamburg, 21 June 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 68–69 [also in HSA, 364-13 Mat. Nat. 441312 (copy)].

staffing situation and the reconstitution of the former budget of 6,000 Reichsmark, which had been drastically cut in 1935, a measure that had virtually paralysed the institute's work. Another heavy blow against the institute's working ability was the demolition of the institute's aquarium in 1935.¹¹³ Hence, Brock applied urgently for the construction of a seawater aquarium.¹¹⁴ When Klatt learned about Brock's initiative, he informed the state administration that he regarded Brock's requests as exaggerated given the enduring lack of staff and space he himself had to cope with as a full professor and director of the Zoological Institute and Museum.¹¹⁵

Already three years earlier, Brock and Uexküll had proposed to the Ministry for Science, Education, and Culture a very ambitious plan for the construction of a seawater aquarium combined with a research institute for umwelt research.¹¹⁶ The aquarium was planned to function both as a tourist attraction and as a research facility. Perhaps because they were very confident of a successful outcome of their petition or perhaps simply due to a tactical mistake, Uexküll and Brock omitted to explain how their specific approach of umwelt research and already extant marine research at other institutions in Hamburg could complement each other. Not surprisingly, this time the resistance came from Schnakenbeck, director of the Department of Fishery Biology of the Zoological Institute and Museum,

¹¹³ Cf. the senator of the Administration for Economy, Technology, and Labour to the Fisheries Biology Department of the State Institute of Hygiene, Hamburg, 23 June 1936, attachment: copy of a letter from Uexküll to Hamburg's mayor dated 8 June 1936, with attachments including Uexküll's and Brock's memorandum for the construction of a seawater aquarium and an institute for umwelt research, HSA, 364-13 Mat. Nat. 441312. The demolition of the institute's aquarium is mentioned on p. 2 of the memorandum.

¹¹⁴ This planned project is not to be confused with the aquarium that was opened in conjunction with a restaurant as part of the exhibition "Blessing of the Sea" (*Segen des Meeres*) on 29 April 1939, in the Planten un Blomen park. Brock was a consultant on the construction of this aquarium and was appointed as its scientific director after its opening; see Brock to Dean Raethjen, Hamburg, 30 May 1939, HSA, 113-5_B V 92 d UA 33 [also in HSA, 361-6_IV 2184]. The combination of aquarium and restaurant also proved to be a commercial success, but in 1943 the facility was destroyed by a bombing raid. After the war, Brock wanted to build on the earlier successes, and on 22 April 1947 he submitted a "Memorandum on the planning of a show aquarium with scientific research institute and aquarium restaurant with model fish kitchen" (*Denkschrift zur Planung eines Schauaquariums mit wissenschaftlichem Forschungsinstitut und Aquariumsgaststätte mit Musterfischküche*), HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 174–180; for the history of the building destroyed in 1943, see pp. 5–6). The memorandum bears the handwritten note that Rector Wolff had seen it on 21 July 1947, but nothing is known about its further fate.

¹¹⁵ The director [of the State Institute for Zoology, i.e. Klatt] to Hamburg's State Administration, University Division, Hamburg, 23 August 1939, HSA, 364-13 Mat. Nat. 441312 (carbon copy).

¹¹⁶ See fn. 113.

who argued that Uexküll's and Brock's projects were not compatible with the fact that, based on the plans of the rector of the University of Hamburg, the Research Association for Marine Science (*Forschungsgemeinschaft für Meereskunde*) had recently been founded.¹¹⁷ According to Schnakenbeck, it was feared that the Biological Institution Helgoland (*Biologische Anstalt Helgoland*) might consider a seawater aquarium in Hamburg as a competitive institution and therefore leave the Research Association. Generally, Schnakenbeck was irritated by Uexküll's and Brock's solo attempts and their lack of consideration of disciplinary, institutional, and administrative conditions and conventions. Indeed, it was not tactically prudent of Uexküll and Brock to have ignored in their petition Hamburg's already existing institutions in the field of marine science.

On 21 November 1939, the dean informed the State Administration (*Staatsverwaltung*) that the Faculty of Mathematics and Natural Sciences had decided against the maintenance of the Institute for Umwelt Research, reasoning that the institute was tailored to Uexküll.¹¹⁸ It was proposed to transform it into an Institute for Animal Psychology under a supernumerary professor (*Extraordinarius*), who had to be regularly appointed, as its director. Thus, Klatt had prevailed,¹¹⁹ albeit only for a short time.

In December 1939, the National Socialist authorities, represented by Georg Ahrens, president of Hamburg's State Administration, intervened vehemently. In a letter to Gundert, rector of the University of Hamburg, Ahrens prohibited renaming the Institute for Umwelt Research and appointing a director other than the current provisional director, Brock.¹²⁰ By 'renaming', Ahrens meant the plans of the Faculty of Mathematics and Natural Sciences to convert the Institute for Umwelt Research into an Institute for Animal Psychology. As can be seen from

¹¹⁷ Schnakenbeck to Hamburg's Authority for Economy, Hamburg, 30 June 1936, HSA, 364-13 Mat. Nat. 441312 (copy). For the *Forschungsgemeinschaft für Meeresforschung an der Hansischen Universität*, see Lenz 1991: 1248–1249.

¹¹⁸ The dean of the Faculty of Mathematics and Natural Sciences (signed *per pro.* by Vice Dean Koch) to Hamburg's State Administration via the rector, Hamburg, 21 November 1939, HSA, 364-13 Mat. Nat. 441312.

¹¹⁹ Eight years later Klatt stated in his own account of these events that it was his proposal to transform the Institute for Umwelt Research into an Institute for Animal Psychology and to hold an official process of appointing its future director; see Klatt to the Faculty of Mathematics and Natural Sciences, [Hamburg], 30 June 1947, HSA, 364-13 Mat. Nat. 441312.

¹²⁰ Ahrens to Gundert, rector of the University of Hamburg, 20 December 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 80; a copy of Ahrens's letter was sent by Gundert to Koch, [vice] dean of the Faculty of Mathematics and Natural Sciences, on 23 December 1939, HSA, 364-13 Mat. Nat. 441312.

another letter, Ahrens regarded such a redesignation as “destruction of the entire work of Uexküll and Brock”.¹²¹

Ahrens further pointed out the military's strong interest in preserving the institute and keeping Brock as its director, at least as long as the war continued.¹²² Brock would be granted leave from his military service every two weeks to accomplish the most urgent work personally. In addition, Ahrens even declared that the Ministry for Science, Education, and Culture would be willing to appoint Brock as a supernumerary professor if the faculty submitted a proposal in this regard. At the bottom of the letter, there is a handwritten remark of unknown origin, reading: “The professional representative [an expression that could only refer to Klatt] rejects the request.”

In his immediate and dutiful reply to Ahrens, Rector Gundert made it clear that the affiliation of the Institute for Umwelt Research with the Faculty of Mathematics and Natural Sciences had only occurred because the university had trusted that the institute would be in good hands there and that its existence would not be called into question. Therefore, Gundert welcomed the order that, for reasons of defence of the Reich, the transformation of the institute into an Institute for Animal Psychology was prohibited and that it was to continue to exist in its present form under the direction of Brock.¹²³

On 9 September 1938, the Reich Minister for Science, Education, and Culture Bernhard Rust had not only given his consent to incorporating the Institute for Umwelt Research into the Faculty of Mathematics and Natural Sciences (see Section 2.5), but also to appointing Brock as director of the institute.¹²⁴ Interestingly, on the reverse of the minister's letter, there is a handwritten remark

¹²¹ State Secretary (*Staatssekretär*) Ahrens to Mayor Krogmann, Hamburg, 4 March 1940, HSA, 364-13 Mat. Nat. 441312 [copy enclosed in a letter from Krogmann to Uexküll, Hamburg, 5 March 1940, HSA, 364-13 Mat. Nat. 441312 (copy)].

¹²² Ahrens to Gundert, Rector of the University of Hamburg, Hamburg, 20 December 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 80.

¹²³ Letter signed ‘G’ (Gundert) to Ahrens, 21 December 1939, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 81; see also the excerpt from the minutes of the University Senate of 20 January 1940, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 83.

¹²⁴ The Reich Minister for Science, Education, and Culture to the Reich Governor (*Reichsstatthalter*) in Hamburg, Berlin, 9 September 1938, HSA, 361-5 II_A d 32, sheet no. 9 [also in HSA, 361-6_IV 1247, vol. 1 (copy), and in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 52 (copy)]. For *Reichsstatthalter* Karl Kaufmann, see Lohalm 2005.

that Brock's appointment had not been requested and must be an error. The remark stemmed from the University Division of the State Administration.¹²⁵

While the Faculty opposed Brock's appointment by protracting the whole procedure and appointing him only as a provisional director on 23 March 1939 (see Section 2.5), the Reich Minister for Science, Education, and Culture continuously insisted on Brock's nomination.¹²⁶ Also, the rector of the University of Hamburg pleaded for Brock's appointment, "the more so as given the peculiarity [*Eigenart*] of the institute, there is no other person at all to come into consideration for its directorship".¹²⁷

Finally, Brock gained this post on 1 March 1940,¹²⁸ but was not appointed as a supernumerary professor due to the resistance offered by Klatt. In February 1940, the dean of the Faculty of Mathematics and Natural Sciences informed the rector that Klatt had refused to apply for Brock's appointment or to support such an application, which led the dean to continue:

¹²⁵ This is evident from a letter from the rector of the University of Hamburg to the dean of the Faculty of Mathematics and Natural Sciences dated 28 February 1939, HSA, 364-13 Mat. Nat. 441312.

¹²⁶ The Reich Minister for Science, Education, and Culture to the Reich Governor in Hamburg, Berlin, 8 December 1938, HSA 361-5 II_A d 32, sheet no. 10; the Reich Minister for Science, Education, and Culture to the Reich Governor in Hamburg, Berlin, 1 February 1939, HSA, 361-5 II_A d 32, sheet no. 12 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 62 (copy)]; the Reich Minister for Science, Education, and Culture to the Reich Governor in Hamburg, Berlin, 23 March 1939, HSA, 113-5_B V 92 d UA 33; the Reich Minister for Science, Education, and Culture to the Reich Governor in Hamburg, Berlin, 20 January 1940, HSA, 361-5 II_A d 32, sheet no. 18 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 84 and 89 (copies), and in HSA, 364-13 Mat. Nat. 441312 (copy)]; Hamburg's State Administration, University Division, to the rector of the University of Hamburg, Hamburg, 22 February 1940, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 86 [also in HSA, 361-5 II_A d 32, sheet no. 20 (copy)].

¹²⁷ Gundert (rector of the University of Hamburg) to Hamburg's State Administration, University Division, Hamburg, 20 February 1940, HSA, 361-5 II_A d 32, sheet no. 19 [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 89 (copy)].

¹²⁸ Hamburg's State Administration, University Division, to Brock, [Hamburg], 1 March 1940, HSA, 364-13 Mat. Nat. 441312 (copy); Hamburg's State Administration, University Division, to Brock, [Hamburg], 1 March 1940, HSA, 361-5 II_A d 32, sheets no. 21 and 22 (two carbon copies) [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 91 (copy)]; Hamburg's State Administration to the Reich Minister for Science, Education, and Culture, [Hamburg], 12 March 1940, HSA, 361-5 II_A d 32, sheets no. 23 and 24 (two carbon copies) [also in HSA, 113-5_B V 92 d UA 33 (carbon copy)].

There is no point in trying to get the faculty committee members to vote against the professional representative [*Fachvertreter*, i.e. Klatt] by working on each of them. Rather, a way to arrange what is required in such cases without the professional representative must be found.¹²⁹

On 4 March 1940, Ahrens informed Hamburg's mayor Krogmann of his intervention in favour of Brock and the Institute for Umwelt Research, adding that the rector of the University of Hamburg (Gundert) had sided with him and would work toward Brock's appointment as supernumerary (*außerplanmäßiger*) professor.¹³⁰ Brock was told by Dean Raethjen that Ahrens's suggestion was illusory because the application to award a supernumerary professorship would have to be made by a scientist.¹³¹

Ahrens continued his commitment to the Institute for Umwelt Research, as is evident from a letter by Eduard Keeser, professor of pharmacology, who had become rector in 1941, to Wilhelm Blaschke, dean of the Faculty of Mathematics and Natural Sciences.¹³² Given the Supreme Command of the Army's interest in the practical applications of umwelt research, Ahrens had commissioned Keeser to support the Institute for Umwelt Research as far as possible. As financial support for the institute was unrealistic, Keeser proposed to foster it in an ideal sense by appointing Brock as a supernumerary professor. However, after Blaschke had talked to the rector, the matter was deferred.¹³³ Already at the end of July 1941, Blaschke, obviously trying to avoid difficulties within the faculty, had informed Brock that it would be advisable to postpone his appointment until six years had passed since his habilitation, that is, until Brock's appointment would be an automatic consequence according to the legal regulations.¹³⁴

¹²⁹ The dean of the Faculty of Mathematics and Natural Sciences (signed *per pro.* by Vice Dean Koch) to the rector of the University of Hamburg, 5 February 1940, HSA, 361-6_IV 2184 (carbon copy).

¹³⁰ State Secretary (*Staatssekretär*) Ahrens to Mayor Krogmann, Hamburg, 4 March 1940, HSA, 364-13 Mat. Nat. 441312 [copy enclosed in a letter from Krogmann to Uexküll, Hamburg, 5 March 1940, HSA, 364-13 Mat. Nat. 441312 (copy)]; see also Brock to Keeser, rector of the University of Hamburg, Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184, p. 1.

¹³¹ Brock to *Gaudozentenschaftsführer* (leader of the regional district's lecturers) Anschütz, Spandau, 2 August 1940 (carbon copy), attachment to a letter from Brock to Ahrens, Berlin-Spandau, 8 August 1940, 361-6_IV 1247, vol. 1.

¹³² Keeser to Blaschke, Hamburg, 25 August 1941, HSA, 361-6_IV 2184. Ahrens's strong and persistent support for the Institute for Umwelt Research is again mentioned in a letter from Keeser to Blaschke, Hamburg, 20 November 1942, HSA, 361-6_IV 2184.

¹³³ Keeser to Blaschke, Hamburg, 25 August 1941, HSA, 361-6_IV 2184, handwritten note by Blaschke.

¹³⁴ Blaschke to Brock, Hamburg, 31 July 1941, HSA, 361-6_IV 2184 (carbon copy).

Of course, Brock seized every opportunity to stress the significance of Umwelt research for military purposes and to promote his appointment as a supernumerary professor.¹³⁵ In March 1941, the Supreme Command of the Army pointed out its interest in the application of Umwelt research as done by the staff of Hamburg's Institute to the training of guide dogs and carrier pigeons.¹³⁶ Among the specific research questions regarded as particularly relevant were the effects of biological scent traits on dogs, the effects of carrier pigeon traits on raptors, and the factors determining the flight orientation of carrier pigeons. On 20 March 1941,¹³⁷ Brock was moved to the Army School for Dog and Carrier Pigeon Service (*Heeresschule für Hunde- und Brieftaubendienst*), especially to carry out experiments with carrier pigeons. In his letter, dated 13 July 1941, to the mathematician Blaschke, dean of the Faculty of Mathematics and Natural Sciences, Brock reports that the Armed Forces took over the Hamburg Institute's method of training guide dogs, carried out by Lieutenant Dr Brüll, Brock's disciple.¹³⁸ A rather disquieting remark about another disciple of Brock's can be found in Brock's letter to Rector Keeser, dated 16 November 1942: "A second disciple, the *Oberscharführer* [lit. 'senior squad leader'] Dr Wilde, has recently been assigned to the training of protection dogs ('*Schutzhunde*') with the SS [*Waffen-SS*]."¹³⁹ Dog handlers of the SS who were deployed in concentration camps needed to pass courses at one of five different institutions, with the Army School for Dog and Carrier Pigeon Service being one of them.¹⁴⁰ Further research has to be done to clarify whether the dogs trained by Wilde were used in concentration camps.

With the war going on and the tide turning against the German Reich, the demand for guide dogs rose steadily. In autumn 1943, the Supreme Command of the Army reconfirmed its interest in the research done by the Institute for Umwelt

¹³⁵ Brock to Raethjen, dean of the Faculty of Mathematics and Natural Sciences, Berlin-Spandau, 2 April 1940, HSA, 361-6_IV 2184; see also the other letters from Brock cited in this and the following paragraphs.

¹³⁶ Supreme Command of the Army to the Reich Governor in Hamburg, Berlin, 5 March 1941, HSA, 361-6_IV 2184 (copy); see also Brock to Keeser, rector of the University of Hamburg, Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184, p. 1.

¹³⁷ Certificate by the Army School for Dog and Carrier Pigeon Service, Berlin-Spandau, 29 March 1941, HSA, 361-6_IV 1247, vol. 1; *Brieftaubenmeister* (Carrier pigeon master) Brock to Hamburg's State Administration, Berlin-Spandau, 31 March 1941, HSA, 361-6_IV 1247, vol. 1.

¹³⁸ Brock to Blaschke, Spandau, 13 July 1941, HSA, 361-6_IV 2184; see also Brock to Keeser, rector of the University of Hamburg, Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184, p. 2.

¹³⁹ Brock to Keeser, rector of the University of Hamburg, Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184, p. 2.

¹⁴⁰ <https://www.deutsche-digitale-bibliothek.de/item/J53YZ4XORKLQ5BQB3EXGWAD5FOL4Y3SZ>

(retrieved on 17 August 2022).

Research,¹⁴¹ which saved the Institute for Umwelt Research from having its premises confiscated by the authorities¹⁴² to provide housing for people who had become homeless after the devastating bombing, code-named by the Allied Forces as 'Operation Gomorrha', of large parts of Hamburg in the last week of July 1943 and the first days of August 1943. Of course, in the last months of the war it became even more important for university institutes to show that they were conducting research that was important for the war effort. Thus, in November 1944, Brock suggested to the rector of the University of Hamburg that the institute be part of the Defence Research Association (*Wehrforschungsgemeinschaft*),¹⁴³ an organization created by Hermann Göring, a leading National Socialist politician and – among numerous other posts – president of the Reich Research Council, by decree on 24 August 1944 (Schmaltz 2009: 332). During Brock's absence due to his service at the Army School for Dog and Carrier Pigeon Service, Dr Emilie Kiep-Altenloh was head of the Institute for Umwelt Research as Brock's representative from 1941.¹⁴⁴

The relationship between Brock and the faculty remained complicated. On 11 March 1942, Brock wrote a letter to the rector of the University of Hamburg, Keeser, who sent a copy of it to the dean of the Faculty of Mathematics and Natural Sciences on 13 March 1942.¹⁴⁵ Enclosed in Brock's letter was a clipping from the popular journal *Die Gartenlaube* ('The gazebo') reporting on the armed forces' adoption of the methods developed at the Institute for Umwelt Research. Brock directly addressed the difficulties with the faculty, arguing that its disciplinary representatives could not properly assess the tasks the Institute for Umwelt Research performed for the armed forces because their research was not open

¹⁴¹ Supreme Command of the Army to the rector of the University of Hamburg, Berlin, 14 October 1943, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 98; see also the Rector of the University of Hamburg to Hamburg's State Administration, University Division, Hamburg, 21 October 1943, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 99 (carbon copy).

¹⁴² Cf. the rector of the University of Hamburg to the Supreme Command of the Army, 23 September 1943, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 94 (carbon copy).

¹⁴³ Brock to Keeser, rector of the University of Hamburg, Sperenberg (Kreis Teltow), 1 November 1944, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 102.

¹⁴⁴ Kiep-Altenloh to Wolff, rector of the University of Hamburg, Hamburg, 11 August 1945, attachment: Activity report of the Institute for Umwelt Research, p. 1, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 104–106.

¹⁴⁵ Rector Keeser to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 13 March 1942, HSA, 364-13 Mat. Nat. 441312, attachment: Brock to Keeser, Berlin-Spandau, 11 March 1942 (copy).

to the public. Moreover, he advised the rector to speak directly to the Ministry for Science, as the faculty could always furnish enough negative expert opinions if it did not agree with the objectives of the Institute for Umwelt Research and its scientists, a common practice followed by the Faculty already at the time when Uexküll was still the director of the institute.

In a conversation with the rector at the beginning of May 1942, Brock reported that Major Dr Brückner from the Communications Section (*Nachrichtenabteilung*) of the Supreme Command of the Army was interested in giving a lecture and showing two films on the training of guide dogs and carrier pigeons to draw attention to the Institute's research and foster interest in it.¹⁴⁶ However, Brückner was not invited by the rector for the presentation because, as Brock was told, the event could only take place when the Psychological Institute had a confirmed director since the films could only be shown in the lecture hall of that institute.¹⁴⁷ Of course, this was a rather flimsy excuse, perhaps indicating that the Faculty of Philosophy, to which the Psychological Institute belonged, feared some kind of competition.

Not surprisingly, Klatt did not give up his resistance to the advances made by Ahrens, Gundert, Keeser, and Raethjen (see above) to appoint Brock as a supernumerary professor. In his comment on Brock's letter from 13 July 1941 (see above), in which Brock boasted about the ovation he got for his lecture on umwelt research held in Leipzig in June 1941, Klatt countered that Brock's lecture at the conference of the German Zoological Society in Rostock in August 1939 had been catastrophic.¹⁴⁸ This might appear to be a minor detail, but many zoologists sided with Klatt in his negative assessment. It even seems that Brock's poor performance (as viewed by many of his colleagues) at this conference was something of a crucial experience for many zoologists. Thus, in his expert opinion on Brock, Otto Koehler (Königsberg in Prussia) wrote:

We also talked a lot about his [Brock's] presentation at our last zoologists' conference in Rostock. In this boundless polemic about the concept of umwelt research, there is so much unnecessary jingle of words [*Wortgeklänge*] that the main

¹⁴⁶ Keeser to Blaschke, dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 5 May 1942, HSA, 364-13 Mat. Nat. 441312; see also Brock to Keeser, Berlin-Spandau, 11 May 1942, HSA, 361-6_IV 2184, p. 2.

¹⁴⁷ Brock to Keeser, Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184, p. 1.

¹⁴⁸ Klatt to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Hamburg, 29 July 1941, HSA, 361-6_IV 2184; see also Klatt to the Dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Hamburg, 30 May 1942, HSA, 361-6_IV 2184 (original and carbon copy).

thing, namely the continuation of the work, is forgotten. [...] The crusade against physiology is nothing short of a scientific scandal, and a young man like Brock should have better things to do than blow that horn.¹⁴⁹

Koehler admitted that Brock had been a very talented experimental researcher, but in his view, Brock went astray by confining himself to polemizing and defending his teacher's doctrine instead of doing profound experimental research. For Koehler, what Uexküll and Brock wrote about umwelt research consisted of nothing else but reformulating knowledge produced by comparative physiology and comparative psychology.¹⁵⁰

Koehler was one of the three zoologists proposed by Klatt as external experts to assess Brock. The other two were Max Hartmann (Berlin) and Hermann Weber (Strasbourg).¹⁵¹ Hartmann's statement is similar to Koehler's.¹⁵² He considered Brock a very talented researcher who, having come under the negative influence of Uexküll, began to apply and expand his teacher's doctrine in the narrowest way possible, arrogantly attributing to it a scientific value that stands in stark contrast to its real scientific results. Hartmann also referred to Brock's presentation at the conference in Rostock. According to Hartmann, Uexküll's and Brock's terminology is nothing else but an intricate, heavily holistic, and teleologically oriented conceptualization in place of the easier concepts of sensory physiology used by von Frisch and his disciples and by Lorenz with their extensive and highly successful application of causal analytical experiments. In his expert opinion, Hartmann openly declared himself an opponent of Uexküll's direction of theoretical biology, especially of how it was represented by Brock. As early as 1931, Hartman had declared in a seminal paper on the "world of the organic" (*Welt des Organischen*) that neither Driesch nor Uexküll were the leaders of the new biology, but researchers working on a strict causal-analytical experimental basis, such as Boveri, Correns, Morgan, and Spemann, whereas, in Hartmann's view, no single biological insight had ever been achieved with the help of vitalist concepts (Hartmann 1931: 44–45, 70–71). Indeed, Hartmann clearly pointed out the weak

¹⁴⁹ Koehler to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Königsberg in Prussia, 15 December 1942, HSA, 361-6_IV 2184.

¹⁵⁰ Koehler to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Königsberg in Prussia, 15 December 1942, HAS, 361-6_IV 2184.

¹⁵¹ Klatt to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Hamburg, 29 July 1941, HSA, 361-6_IV 2184; Klatt to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Hamburg, 30 May 1942, HSA, 361-6_IV 2184 (original and carbon copy).

¹⁵² Max Hartmann to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Buchenbühl (Weiler im Allgäu), 27 December 1942, HSA, 361-6_IV 2184.

point of vitalist or holistic hypotheses, namely their lack of true explanatory value, as they merely impose what has to be explained on some principle or factor inaccessible to experimental verification (Hartmann 1931: 29).

The third referee, Weber, emphasized the value of Brock's early zoological works, too, and acknowledged Brock's achievements in expanding Uexküll's umwelt theory. However, he criticized Brock's one-sidedness in theoretical matters and his overestimation of the potential and value of his research direction.¹⁵³

The only unanimously positive assessment of Brock was written by Hans Volkelt, the director of the Institute for Psychology and Pedagogy in Leipzig. Brock himself had mentioned Volkelt in a letter to the rector as a potential evaluator.¹⁵⁴ Fully aware of the fact that Uexküll and Brock considered themselves biologists and not psychologists, Volkelt deliberately praised the importance of umwelt research's findings for psychology: "These are among the most interesting facts of animal life and, as such, are highly welcome, well-established material for the animal psychologist, who gratefully processes them."¹⁵⁵

Given the fact that the legal preconditions for the appointment of Brock as a supernumerary professor had meanwhile been fulfilled and given Volkelt's positive assessment, Klatt finally gave up his resistance, but not without stressing that even Buddenbrock, who doubtless regarded Brock with favour, had expressed his concern three years earlier that Brock's lacking of Uexküll's originality might dilute the whole research field (see Section 2.5).¹⁵⁶ The Faculty only attached Volkelt's positive assessment to its official application to the Reich Minister for Science, Education, and Culture to appoint Brock as a supernumerary professor.¹⁵⁷ Brock's eventual appointment as a supernumerary professor on 29 December 1943,¹⁵⁸ was rather an automatic consequence of his having been a lecturer for

¹⁵³ Weber to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), Strassburg, 15 December 1942, HSA, 361-6_IV 2184.

¹⁵⁴ Brock to the rector of the University of Hamburg (Keeser), 16 November 1942, HSA, 361-6_IV 2184, p. 2; for Volkelt, see Heinze 2001: 59–67, 135–145.

¹⁵⁵ Volkelt to the dean of the Faculty of Mathematics and Natural Sciences, Leipzig, 30 December 1942, HSA, 361-6_IV 2184, p. 2 [also in HSA, 361-6_IV 1247, vol. 1 (copy)].

¹⁵⁶ Klatt to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 21 January 1943, HSA, 361-6_IV 2184.

¹⁵⁷ Blaschke, dean of the Faculty of Mathematics and Natural Sciences, to the Reich Minister for Science, Education, and Culture, 31 May 1943, HSA, 361-6_IV 2184 (carbon copy) [also in HSA, 361-6_IV 1247, vol. 1 (carbon copy)].

¹⁵⁸ The Reich Minister for Science, Education, and Culture to Brock, Berlin, 29 December 1943, HSA, 361-6_IV 1247, vol. 1; *ibid.* a copy of Brock's certificate of appointment. Copies of the letter and the certificate of appointment can also be found in HSA, 361-6_IV 2184.

five years and his status as a combatant.¹⁵⁹ Besides, Brock's appointment did not include entitlement to a future chair.

3. Post-war distortions and Brock's struggle for the Institute's independence

During the war, when Brock served in the military and was assigned to the Army School of Dog and Carrier Pigeon Service (see Section 2.6), and until his return from Russian war captivity in the fall of 1946, Emilie Kiep-Altenloh, who was appointed the Head of the Institute as Brock's deputy in 1941,¹⁶⁰ was in charge of the training of guide dogs according to the method established by Uexküll and Sarris. These activities, partially funded by the German Research Foundation,¹⁶¹ were considered to be of strategic importance (see Section 2.6) so that the Institute for Umwelt Research could survive (Mildenberger 2007: 206–207). In March 1945, Kiep-Altenloh successfully defended her leading position in the institute against Brock, who was not present and tried to strengthen his influence from a distance via Heinz Brüll (Mildenberger 2007: 209). Brüll, one of Uexküll's doctoral students who had received their doctorate in Kiel, had become a known expert on birds of prey by successfully applying Uexküll's doctrine of umwelt to the behaviour of raptors (Brüll 1936). On 1 June 1941, Brüll was commissioned to set up and lead a unit at the Army School for Dog and Carrier Pigeon Service (*Heereschule für Hunde- und Brieftaubendienst*) to train guide dogs for the blind, using the methods developed at the Institute for Umwelt Research, and to train the blind with their guide dogs.¹⁶² By 11 April 1945, Brüll provided guide dogs for 385 war-blind people.¹⁶³ Brock was active at the same Army institution in the training of carrier pigeons (see Section 2.6).

In the autumn of 1945, Kiep-Altenloh outsourced guide dog training to an independent Jakob von Uexküll Foundation for the Training of Guide Dogs for

¹⁵⁹ Blaschke, dean of the Faculty of Mathematics and Natural Sciences, to Brock, 28 January 1943, HSA, 361-6_IV 2184 (carbon copy); Blaschke to the rector of the University of Hamburg, 28 January 1943, HSA, 361-6_IV 2184 (carbon copy); see also Mildenberger 2007: 205–206.

¹⁶⁰ Kiep-Altenloh to Wolff, rector of the University of Hamburg, Hamburg, 11 August 1945, attachment: Activity report of the Institute for Umwelt Research, p. 1, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheets nos. 104–106.

¹⁶¹ <https://www.gepris-historisch.dfg.de/fall/105018?> (retrieved on 17 August 2022).

¹⁶² Brüll, *curriculum vitae*, dated Hamburg, 9 January 1948, HSA, 361-6_IV 1662; Brock to the dean of the Faculty of Mathematics and Natural Sciences (Blaschke), [Berlin-]Spandau, 13 July 1941, HSA, 361-6_IV 2184; Brock to the rector of the University of Hamburg (Keeser), Berlin-Spandau, 16 November 1942, HSA, 361-6_IV 2184.

¹⁶³ Brüll, *curriculum vitae*, dated Hamburg, 9 January 1948, HSA, 361-6_IV 1662.

the Blind (*Jakob von Uexküll-Stiftung zur Ausbildung von Blindenführhunden*). Furthermore, she wanted to modernize Umwelt research and expand the research area of the institute. She planned to bring in scholars from related disciplines, and working groups were to integrate Umwelt research into the specialized work.¹⁶⁴ Brock, apparently not interested in Kiep-Altenloh's suggestions, finally succeeded in ousting her in the summer of 1947, when she lost her post as administrator of the assistant position,¹⁶⁵ while on 1 July 1947 Brüll became her successor,¹⁶⁶ and later, in April 1948,¹⁶⁷ assistant of the Institute. Earlier, Brock had sent to the rector an expert opinion prepared by Brüll on the guide dog training conducted under Kiep-Altenloh's direction.¹⁶⁸ In his report, Brüll criticized both the instruction of the blind and the training of the dogs as being methodologically inaccurate.¹⁶⁹ Moreover, Brock claimed to the School Board that Kiep-Altenloh was not trained for lecture and experimental institute work so that her employment as an assistant had only been a stopgap measure.¹⁷⁰

The Institute for Umwelt Research had a difficult start in the immediate post-war years, not only because of the rivalry between Kiep-Altenloh and Brock, who resumed directorship of the institute on 13 November 1946,¹⁷¹ but also because the strained relationship between Brock and Klatt persisted. Brock tried to expand the institute's scope of research into the field of comparative physiology,¹⁷² which Klatt opposed, arguing that physiology in the sense of Uexküll's Umwelt research

¹⁶⁴ Kiep-Altenloh to Brock, Hamburg, 19 October 1946, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 1, Institut für Umweltforschung (1930–1947), sheet no. 158.

¹⁶⁵ Hamburg's School Board to Kiep-Altenloh, [Hamburg], 25 June 1947, HSA, 361-6_I 0241; Hamburg's School Administration, University Division, notification of Kiep-Altenloh's dismissal as of 30 June 1947, to Hamburg's Personnel Office, Hamburg, 30 June 1947, HSA, 361-6_I 0241.

¹⁶⁶ Brüll, *curriculum vitae*, dated Hamburg, 9 January 1948, HSA, 361-6_IV 1662; Dr von Heppe, School Administration, University Division, to the Institute for Umwelt Research, [Hamburg], 28 June 1947, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheet no. 171 (copy) [also in HSA, 361-6_IV 1662 (copy)].

¹⁶⁷ Senate of Hamburg, Personnel Office, to Brüll, Hamburg, 22 April 1948, HSA, 361-6_IV 1662 (copy); *ibid.* a copy of Brüll's certificate of appointment.

¹⁶⁸ Brock to Wolff, rector of the University of Hamburg, Hamburg, 23 May 1947, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970).

¹⁶⁹ Brüll to Brock, Bad Grund, 23 May 1947, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) (copy).

¹⁷⁰ Brock to Hamburg's School Administration, University Division, Hamburg, 8 May 1947, HSA, 361-6_IV 1662.

¹⁷¹ Brock to Hamburg's School Administration, University Division, Hamburg, 16 November 1946, HSA, 361-6_IV 1247, vol. 1.

¹⁷² Brock to Wolff, rector of the University of Hamburg, Hamburg, 2 May 1947, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 168–169 [also in HSA, 364-13 Mat. Nat. 441312 (signed carbon copy)].

did not correspond to what the term 'physiology' normally stood for in the world of science. A similar disagreement between Klatt and Brock had already taken place in 1936 (see Section 2.4). For Klatt, Uexküll's umwelt research was far more related to natural philosophy than to natural science.¹⁷³ Klatt alluded to a special article by Uexküll in which the latter had argued that umwelt research was completely different from physiology. Klatt certainly meant Uexküll's article "Biology or physiology" ("*Biologie oder Physiologie*"), which had appeared in 1933 (Uexküll 1933c). In this contribution, Uexküll characterized physiology as viewing living beings as dynamic systems, yet as being still determined by physicochemical factors and thus constituting objects. By contrast, according to Uexküll, biology, that is, his umwelt research, considers living beings as subjects organized by an immaterial plan.

Brock's attempt failed,¹⁷⁴ and so did that by his assistant Brüll to expand the Institute's area of responsibility. Brüll applied to the City of Hamburg for funding to set up a "research station to solve problems related to landscape biology".¹⁷⁵ The tasks of this research station should include a plant-sociological mapping of Hamburg properties, experiments with biodynamic fertilization, sensory-physiological and behavioural studies of plant pests as well as high-performance breeding of laying hens. In a letter to the University Department of the Hamburg School Board,¹⁷⁶ Bredemann, professor of applied botany, completely slated Brüll's application, since Brüll had not sought contact with local representatives and his memorandum contained nothing new or original. All of the tasks mentioned by Brüll could also be carried out by the botanical institutes in Hamburg. In addition, Bredemann, apparently intending to cast Brüll's plans in a bad light, pointed out that Brüll's planned fertilization experiments were somewhat embarrassingly reminiscent of the former biodynamic efforts of prominent Nazis such as Rudolf Heß and Julius Streicher (cf. Staudenmaier 2013).

Despite these setbacks, Brock's main success was to have defended the independence of the Institute for Umwelt Research,¹⁷⁷ an achievement that should not

¹⁷³ Klatt to the Faculty of Mathematics and Natural Sciences, [Hamburg], 30 June 1947, HSA, 364-13 Mat. Nat. 441312.

¹⁷⁴ Remy (dean of the Faculty of Mathematics and Natural Sciences) to the rector, 7 March 1950, HSA, 364-13 Mat. Nat. 441312.

¹⁷⁵ Brüll, "Antrag auf Förderung bei der Einrichtung einer Forschungsstation zur Lösung landschaftsbiologischer Aufgaben im Landhaus Fu-chou in Lemsahl", Hamburg, 19 July 1947, HSA, 361-6_IV 1662.

¹⁷⁶ Bredemann to Hamburg's School Board, University Department, Hamburg, 2 December 1947, HSA, 361-6_IV 1662.

¹⁷⁷ The dean of the Faculty of Mathematics and Natural Sciences (Heckmann) to Brock, Hamburg, 5 August 1947, HSA, 361-6_IV 2184 (signed carbon copy) [also in HSA, 364-13 Mat. Nat. 441312 (carbon copy)].

be overlooked. On the other hand, with his rigid and uncompromising adherence to Uexküll's original doctrine of *umwelt* with all its philosophical implications and his failure to catch up with modern ethology, Brock considerably contributed to the post-war decline of the Institute for Umwelt Research in Hamburg and of *umwelt* research as a discipline (Mildenberger 2007: 210–215; Franck 2012: 152–153).

The authorities, too, were aware of the situation, which had long been deadlocked, as is shown by a letter from Hans von Heppe, head of the University Department of Hamburg's School Board, to Count Dönhoff. In February 1952, Dönhoff, on behalf of the German Hunting Protection Association (*Deutscher Jagdschutz-Verband*), advocated the continued employment of Brock's assistant Heinz Brüll, since Brüll was adept at applying *umwelt* theory within the German hunting community. Furthermore, Dönhoff expressed concern about the future of the institute and advocated its continued existence.¹⁷⁸ Heppe's response is significant:

Undoubtedly, Brock is a faithful preserver of von Uexküll's heritage and ideas, but in the opinion of the faculty, he is also nothing more, and science has not stood still since Uexküll's death. I know that there were certain tensions between the Hamburg specialist representative (*Fachvertreter*) [Klatt] and Professor Uexküll, which, of course, were passed on to the Institute for Umwelt Research and its current director [Brock] after Uexküll's death. Therefore, to eliminate anything personal, a decision on the continued existence of the Institute for Umwelt Research will not be made as long as the specialist representative in question is still in office. However, it seems to me that, in the long run, some form of unification, at least organizationally, with the local biology must be achieved, which is necessary and correct, both factually and for personal reasons.¹⁷⁹

Also, the fact that Brock, after Klatt's retirement, recommended himself as Klatt's successor in an extremely embarrassing letter,¹⁸⁰ will not have enhanced his reputation in the Faculty of Mathematics and Natural Sciences. However, it was some other, hitherto unnoticed, factors and developments, some of which can be regarded as unfortunate coincidences, which put the final nail in the coffin of the Institute for Umwelt Research in 1960.

¹⁷⁸ Count Dönhoff from the Head Office of the German Hunting Conservation Association (*Deutscher Jagdschutz-Verband*) to von Heppe, Curator of the University of Hamburg, Bonn, 20 February 1952, HSA, 361-6_IV 1662.

¹⁷⁹ von Heppe to Count Dönhoff, [Hamburg], 25 February 1952, HSA, 361-6_IV 1662.

¹⁸⁰ Brock to the dean of the Faculty of Mathematics and Natural Sciences (Kollmann), 28 January 1954, HSA, 364-5 II, Mat.-Nat. 43237, vol. 1.

4. A lost chance and the final demise of the Institute for Umwelt Research

After Brock's death on 27 October 1958, the question arose of what should become of the Institute for Umwelt Research. On 5 December 1958, Dean Mevius proposed to the School Board (*Schulbehörde*), which was in charge of the university as well, to incorporate the Institute for Umwelt Research into the Zoological State Institute as a new 'Department of Biology and Ecology of Animals (former Institute for Umwelt Research)'. Mevius argued that different branches of zoology, such as animal psychology, sensory physiology, ethology, and ecology, are now concerned with the relationships between an animal and its umwelt, and that these diverse tasks cannot be accomplished by a single Institute for Umwelt Research, but only within the context of the entire zoology.¹⁸¹ Evidently, Mevius did not see that Uexküll's doctrine of the umwelt stood for an integrative approach. Moreover, one gets the impression that Mevius did not grasp the specific meaning of Uexküll's concept of the umwelt, but rather assumed the common meaning of the term in the sense of environment or surroundings. On the other hand, it must be admitted that the Uexküllians' intransigent and hard-line anti-Darwinian and provitalist stance had inevitably led to their self-isolation.

The institutional and disciplinary tradition of umwelt research in Hamburg suffered its fatal blow when it came to an open conflict between the ethologist Franz Sauer and Director of the Zoological Institute Curt Kosswig triggered by a polemic newspaper article written by the journalist Gösta von Uexküll, son of Jakob von Uexküll. Originally, it was at the instigation of Kosswig that Sauer became head of the Department of Biology, Ecology, and Ethology of the Zoological Institute on 1 September 1959.¹⁸² Sauer, a disciple of Otto Koehler, came from the University of Freiburg (Schmidt-Koenig 1979). He was famous for having demonstrated in a planetarium simulation that nocturnal migratory birds orient themselves to the starry sky (Sauer 1956, 1957a, 1957b; Sauer, Sauer 1960). On 17 November 1959, Sauer gave his inaugural lecture entitled "Jakob von Uexküll's conception of the umwelt of animals in the context of today's ethology".¹⁸³ The title goes back to a suggestion by Kosswig, who

¹⁸¹ Mevius to Hamburg's School Board, University Division, 5 December 1958, HSA, 364-13 Mat. Nat. 441312 [also in HSA, 131-13_353 (copy)].

¹⁸² Sauer to Hamburg's Senate, Hamburg's School Board, the Academic Rectorate, the Faculty of Mathematics and Natural Sciences, and the director of the Zoological State Institute and Zoological Museum, Hamburg, 18 November 1959, pp. 1-2, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947-1970), sheets nos. 55, 58-60.

¹⁸³ Mevius, invitation to Sauer's inaugural lecture, HSA, 361-6_IV 2358.

in this way wanted to take the wind out of the sails of the “circle of intriguers (*Intrigantenkreis*)” who disapproved of Sauer.¹⁸⁴ By “circle of intriguers”, Kosswig meant a group of people from Uexküll’s family and the inner circle of Hamburg’s umwelt research.

In a letter dated 26 October 1959, to Hamburg’s School Board, Sauer complained of the unacceptable staffing situation of his department, located in the house of the former Institute for Umwelt Research, where a single laboratory assistant simultaneously fulfilled the tasks of a caretaker, metalworker, carpenter, electrician, messenger, and custodian of the devices and the library. Therefore, Sauer applied for the employment of a technical assistant for the photographic laboratory, the library, and the keeping of the experimental animals. Sauer’s letter was not transferred to the School Board, as a handwritten remark by Kosswig reveals. The reason why Kosswig prevented Sauer’s letter from reaching the School Board will have been that Sauer declared that he took over the department in a hopelessly run-down state unworthy of a university, with the research devices neglected, filthy, and partly misapplied.¹⁸⁵

The situation escalated when a polemic article written by Gösta von Uexküll (1959b) appeared on 11 November 1959, in the widely read newspaper *Die Welt*.¹⁸⁶ Without mentioning the involved persons by name, the article with the headline “The lecturer sleeps on the air mattress” vividly described the miserable financial and personal situation of a lecturer, “Dr X.,” that is, Sauer, who gave up a promising career in the United States to take over a widely known institute (i.e. the Institute for Umwelt Research), only to find out that the institute no longer existed but had been transformed into a department of another institute. According to Gösta von Uexküll, this other institute, i.e. the Institute of Zoology, had swallowed the Institute for Umwelt Research’s budget and its assistantship, while “Dr X.” had to put up with fully insufficient funds and a minimal staff. Furthermore, the article contrasts “Dr X.’s” idealism bordering on foolishness with the conduct of the director of the Institute of Zoology (Kosswig) acting as a “hungry” or “raging

¹⁸⁴ Kosswig, Hamburg, 19 November 1959, remarks on Sauer’s letter from 18 November 1959, p. 4, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), file item no. 56 (sheets nos. 68–71) [also in HSA, 361-6_IV 2358 (carbon copy)].

¹⁸⁵ Sauer to Hamburg’s School Board, 26 October 1959, Archive of the University of Hamburg, files of the Zoological State Institute and Zoological Museum, box 3, folder ‘Institut für Umweltforschung U 38’.

¹⁸⁶ Clippings of the article “*Der Dozent schläft auf der Luftmatratze*” (“The lecturer sleeps on the air mattress”) in *Die Welt* can also be found in HSA, 135-1 VI_1237, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), and in HSA, 361-6_IV 2358.

wolf". Unsurprisingly, Kosswig was enraged by this article, which he thought was published on the initiative of Sauer. Six days later, immediately after Sauer's inaugural lecture on 17 November 1959, he advised Sauer to submit a notice of termination, which happened promptly the next day.¹⁸⁷

From a letter by Sauer to the newspaper *Die Welt*, it becomes clear that Sauer felt deceived by Gösta von Uexküll, whom he received as the son of the famous founder of the institute, Jakob von Uexküll, and not as a reporter.¹⁸⁸ Sauer speaks of a scheming "Uexküll-movement" causing trouble in Hamburg's Senate and University and attacking Kosswig and himself. In his view, Gösta von Uexküll, incited by Georg Kriszat,¹⁸⁹ had the preconceived opinion of dying umwelt research, while he, Sauer, tried to convince him that the durable part of umwelt research had merged into the general concept of ethology. Also, in a letter to Kosswig, Sauer names Kriszat as the person responsible for the article in *Die Welt*. Sauer perceived Kriszat as the leading intrigant within the "Uexküll movement".¹⁹⁰ A close connection between Gösta von Uexküll and Kriszat is also asserted in a letter from Kosswig to the former dated 16 November 1959, in which Kosswig complains of several falsehoods in Gösta von Uexküll's article in *Die Welt*. According to Kosswig, in a conversation on 12 January 1959, Uexküll had recommended the employment of Kriszat, pointing out that due to his own good

¹⁸⁷ Sauer to Hamburg's Senate, Hamburg's School Board, the Academic Rectorate, the Faculty of Mathematics and Natural Sciences, and the director of the Zoological State Institute and Zoological Museum, Hamburg, 18 November 1959, p. 1, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 55, 58–60; Kosswig, Hamburg, 19 November 1959, remarks on Sauer's letter from 18 November 1959, p. 2, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), file item no. 56 (sheets nos. 68–71) [also in HSA, 361-6_IV 2358 (carbon copy)].

¹⁸⁸ Sauer to the newspaper *Die Welt*, Hamburg, 13 November 1959 (attached to Sauer's letter from 18 November 1959, mentioned in the preceding footnote), pp. 1–2, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 61–63 (copy).

¹⁸⁹ See also Sauer to Kosswig, Hamburg, 18 November 1959 (attached to Sauer's letter from 18 November 1959, mentioned in n. 185), HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 64–67 (carbon copy), pp. 2, and 3. Kriszat is mainly known as the co-author of the famous *Streifzüge* (Uexküll, Kriszat 1934), for which he took care of the illustrations. He worked at the Institute for Umwelt Research until the end of the war (Mildenberger 2007: 170). In the 1950s, having returned to his homeland, Sweden, Kriszat published on the ontogeny of sea urchins (Mildenberger 2007: 228).

¹⁹⁰ Sauer to Hamburg's Senate, Hamburg's School Board, the Academic Rectorate, the Faculty of Mathematics and Natural Sciences, and the director of the Zoological State Institute and Zoological Museum, Hamburg, 18 November 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 55, 58–60.

relationships with the Federal Navy (*Bundesmarine*), he (G. v. U.) would be able to raise considerable funds for research on the incrustation of ship hulls.¹⁹¹

What were the aims of this “Uexküll-movement”? In an attempt to save the institute’s independence, in January 1959, long before Sauer came to Hamburg, Gösta von Uexküll (1959a) published an article titled “Isn’t the umwelt part of the university?” (“*Gehört die Umwelt nicht zur Universität?*”) in the weekly newspaper *Die Zeit*, and Hans Gresmann from the NDR (North German Broadcasting) reported on the Institute for Umwelt Research. Unfortunately, the broadcast has not survived.¹⁹² According to Kosswig, the tenor of the broadcast was that Hamburg and its university owe it to both Uexküll and his discipline to make sure that the Institute for Umwelt Research continues its work in Uexküll’s sense.¹⁹³ Other initiatives by the “Uexküll-movement” or the “Uexküllians” (“*Uexküllianer*”), as they were called in the file note, encompassed proposals for potential successors to Brock, namely Dr Harald Kaldewey, the assistant at the Institute for Umwelt Research, Dr Heinz Brüll,¹⁹⁴ the former assistant, and Kriszat. None of these researchers stemming from the inner circle of Hamburg’s umwelt research were seriously taken into consideration. Kaldewey was declined because he was a botanist; Brüll had not habilitated during his time as an assistant;¹⁹⁵ and Kriszat, proposed not only by Gösta von Uexküll and Thure von Uexküll¹⁹⁶ but also by Friedrich Brock’s widow Dr Helene Brock,¹⁹⁷ was not regarded as an appropriate candidate either.

¹⁹¹ Kosswig to Gösta von Uexküll, [Hamburg], 16 November 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheet no. 51 (carbon copy), p. 2; see also Kosswig to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 4 December 1959, HSA, 361-6_IV 2358, p. 2. Already in the early 1930s, Wolfgang Neu, drawing on Uexküll’s doctrine of the umwelt, had worked on a biological method to avoid incrustation on hulls at the Laboratory for Research on Incrustation of the German Marine Industry (*Laboratorium für Bewuchsforschung der deutschen Schifffahrtsindustrie*) in Cuxhaven (Mildenberger 2007: 169; Mildenberger, Herrmann 2014: 311).

¹⁹² Communication from the Archive of the NDR on 23 August 2021.

¹⁹³ Attachment 1 to a file note from 15 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 66.

¹⁹⁴ Brüll was proposed by the educational councillor (*Studienrat*) Wilhelm Dencker; see Dencker to Mevius, dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 18 November 1958, HSA, 364-13 Mat. Nat. 441312.

¹⁹⁵ Attachment 1 to a file note from 15 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 66; Mevius to Hamburg’s School Board, University Division, 5 December 1958, HSA, 364-13 Mat. Nat. 441312, p. 3.

¹⁹⁶ Kosswig to Senator Landahl, Hamburg, 11 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), pp. 2, and 5.

¹⁹⁷ Helene Brock to Meyer-Abich, 21 December 1958, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 40–41 (copy); for

When Kosswig appeared at the Institute for Umwelt Research with Sauer in December 1958, it was obvious that Kosswig favoured Sauer as Brock's successor. In Helene Brock's opinion, however, the appointment of Sauer would have meant the end of umwelt research since Sauer was a student of Otto Koehler, who was known to have been an opponent of Friedrich Brock. Therefore, she asked the well-known holist Adolf Meyer-Abich, who owed quite a few suggestions to Uexküll, to exert his influence and stand up for Kriszat.¹⁹⁸ However, Meyer-Abich bluntly informed her that he regarded umwelt research as a self-contained, historically and philosophically closed matter. Regarding Sauer, Meyer-Abich had a completely different view than Helene Brock. In his opinion, Sauer was the ideal successor to Uexküll and Brock because he would bring new life to the institute instead of letting it ossify.¹⁹⁹ Meyer-Abich was very enthusiastic about Sauer's work on the song of the warbler (Sauer 1954), a study that he considered a real piece of umwelt research in the Uexküllian sense.²⁰⁰

On 12 December 1959, a follow-up article appeared in *Die Welt*, this time not written by Gösta von Uexküll but three other journalists (Gründler, Usko, Görnitz 1959).²⁰¹ As the case of Sauer had already gone public, the article did no longer render the names of the involved people anonymous, even publishing photos of a smiling Sauer and a rather fierce-looking Kosswig. The article contains quotations from the above-mentioned complaint letters sent by Sauer and Kosswig to the newspaper and interviews with them. The reader was informed that Sauer had already had trouble with his teacher, Otto Koehler, in Freiburg.²⁰² According to Sauer, Koehler regarded the fact that Sauer had been offered a professorship at Yale University as sufficient to call him (Sauer) a traitor of German science and the German fatherland. Although the details of the conflict between Sauer and Koehler can no longer be reconstructed, it is significant that Kosswig also regarded

Meyer-Abich, see Amidon 2008; for the relationship between Meyer-Abich and Uexküll, see Mildenerger 2007: 163–178.

¹⁹⁸ Helene Brock to Meyer-Abich, 21 December 1958, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 40–41 (copy), p. 2.

¹⁹⁹ Meyer-Abich to Helene Brock, Valdivia, 29 December 1958, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheet no. 42 (copy).

²⁰⁰ Meyer-Abich to Helene Brock, Valdivia, 12 January 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheet no. 43 (copy).

²⁰¹ Clippings of the article can also be found in HSA, 135-1 VI_1237, and in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970).

²⁰² See also file note (signature illegible), Hamburg, 11 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 63; Kosswig to dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 4 December 1959, HSA, 361-6_IV 2358, pp. 3–4.

Sauer's attempts to improve his position by referring to his career opportunities in the U.S. as egotism and a two-pronged strategy.²⁰³

Furthermore, the article reported that Kosswig had asked Gösta von Uexküll to take back the complete bequest of Jakob von Uexküll, that is, his books, off-prints, and collection of diapositives. The journalists interpreted Kosswig's move as an indication that he wanted to bereave Umwelt research of essential research resources, while Kosswig argued he intended to deprive the clique (*Klingel*) of former Uexküll disciples of a pretext to hang around in the former institute.²⁰⁴ Sauer had advised disposing of the collection of diapositives, too, but he considered Uexküll's library indispensable. Another aspect treated by the article was Sauer's popularity with Hamburg's biology students. 116 students signed a petition to both the Hamburg School Board and the dean of the Faculty of Mathematics and Natural Sciences to do everything to keep Sauer as a lecturer and researcher at the University of Hamburg.²⁰⁵ In its response, the School Board pointed out that since Sauer himself had resigned, it only had the formal option of complying with the resignation.²⁰⁶

Finally, the Faculty of Mathematics and Natural Sciences had to decide on the case of Sauer. The faculty did not believe Sauer, or did not want to believe him, arguing that Sauer should have known that he would be instrumentalized by Uexküll's epigones, "who would use every opportunity to prevent the intended transformation of the Institute for Umwelt Research into a place of modern research". Moreover, they imputed "ambivalent characteristics" to Sauer and alleged that he had played a double game. Consequently, the faculty sided with Kosswig in his interpretation of the course of events²⁰⁷ and justified his having advised Sauer to submit a notice of termination.²⁰⁸

²⁰³ Kosswig to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 4 December 1959, HSA, 361-6_IV 2358, pp. 3–4.

²⁰⁴ Cf. file note (signature illegible), Hamburg, 11 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 63.

²⁰⁵ Students of the Faculty of Mathematics and Natural Sciences, Biology Student Council (*Fachschaft Biologie*), to Hamburg's School Board, University Section, Hamburg, 24 November 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 57; the same students to the dean of the Faculty of Mathematics and Natural Sciences, 24 November 1959, HSA, 361-6_IV 2358.

²⁰⁶ Meins (School Board, University Section) to the students of the Faculty of Mathematics and Natural Sciences, Biology Student Council, Hamburg, 26 November 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 60.

²⁰⁷ Cf. Kosswig to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 4 December 1959, HSA, 361-6_IV 2358, pp. 3–4.

²⁰⁸ Schmetterer to the Faculty of Mathematics and Natural Sciences, Hamburg, 15 January 1960, HSA, 364-13 Mat. Nat. 441312 (copy) [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) (carbon copy)].

In a statement on the further development of ethology at the University of Hamburg²⁰⁹ that was intended as a press release, the Faculty of Mathematics and Natural Sciences presented a vivid and colourful account of Uexküll's doctrine of the *umwelt* based on Uexküll's popular example of the perception world (*Merkwelt*) and effect world (*Wirkwelt*) of a tick (cf. Uexküll, Kriszat 1934: 1–10; Uexküll 1957: 6–13, 1992: 320–326, 2010: 44–52). The faculty acknowledged Uexküll's achievements in a time when, on the one hand, anthropomorphic concepts of animal behaviour were dominating and, on the other hand, organisms were regarded as machines. However, it was simultaneously contended that the heyday of Uexküll's doctrine dated back 30 to 35 years and that neither Uexküll nor his successors had been able to keep pace with modern experimental ethology. For a biologist, it was claimed, the philosophical implications of Uexküll's doctrine were of secondary importance, while it was all about uncovering testable basic elements of animal behaviour by analysing single cases.

In a letter to the dean of the Faculty of Mathematics and Natural Sciences on 18 December 1959,²¹⁰ Kosswig mentioned that Senator Heinrich Landahl, head of the School Board, cared very much about the maintenance of ethological research and teaching. Landahl's interest in ethology and the Institute for Umwelt Research was probably due to Kriszat's influence, who, according to Sauer,²¹¹ pointed to his good relationships with the Senate. In a letter to Senator Landahl, Kriszat complained vehemently about Kosswig. Kosswig, he said, did not know *umwelt* research and planned to use the Sauer affair to liquidate the Institute.²¹² Kosswig defended himself in a letter to the senator by pointing out that, in his opinion, none of the 60 papers published by the Institute for Umwelt Research from 1936 to 1956 had been capable of contributing creatively to a substantial enrichment or advance in knowledge. In this respect, modern ethology had progressed far beyond

²⁰⁹ Statement (signed by Dean Mevius) of the Faculty of Mathematics and Natural Sciences on the further development of ethology in Hamburg, 15 January 1960, HSA, 364-13 Mat. Nat. 441312 (carbon copy) [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) (carbon copy)].

²¹⁰ Kosswig to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 18 December 1959, p. 1, HSA, 364-13 Mat. Nat. 441312.

²¹¹ Sauer to Hamburg's Senate, Hamburg's School Board, the Academic Rectorate, the Faculty of Mathematics and Natural Sciences, and the director of the Zoological State Institute and Zoological Museum, Hamburg, 18 November 1959, p. 3, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 55, 58–60; see also Sauer to Kosswig, Hamburg, 18 November 1959 (attached to Sauer's just mentioned letter), HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), sheets nos. 64–67 (carbon copy), p. 3.

²¹² Kriszat to Landahl, 19 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 76.

the conceptual framework of umwelt research.²¹³ In his statement to the dean, Kosswig spoke of the Institute for Umwelt Research having “lain dormant for decades, having deteriorated more and more and having lived only in a creditable but completely sterile attachment to its founder”. Kosswig perceived the Institute for Umwelt Research as an “Uexküll family business within the framework of the university”.²¹⁴ Thus, in principle, nothing had changed in the assessment of the Institute for Umwelt Research on the part of zoology since the times of Klatt.

Dean Mevius held it necessary to send to Senator Landahl not only the faculty’s report and decision on the case of Sauer, but also compromising quotations from Uexküll’s letter of 11 November 1935 (see Section 2.2 above), in which Uexküll had curried favour with the National Socialists.²¹⁵ Furthermore, the letter contains a long passage quoted from Winkler’s reservations against the continuation of the Institute for Umwelt Research after Uexküll’s retirement in his letter from 6 December 1935 (see Section 2.3), and mentions the interventions by State Secretary Ahrens in favour of Uexküll’s institute and Brock (see Section 2.6). Clearly, Mevius intended to disavow Uexküll and his doctrine by insinuating with these hints a close relationship between Uexküll and National Socialism. Ironically, Mevius himself had been the National Socialist rector of the University of Münster from 1937 to 1943, which had helped him to be appointed as provisional director of Hamburg’s Botanical Institutes as the successor to Winkler in 1944, although on the appointment list he held only the third place together with another candidate (Hünemörder 1991: 1165).²¹⁶

In his search for a suitable successor to Sauer, Kosswig turned to the sensory physiologist Georg Birukow, full professor of zoology in Göttingen, and Karl von Frisch in Munich.²¹⁷ Frisch recommended his student Herbert Heran in Graz, Austria, who was to be invited to Hamburg for a lecture on 22 February 1960.²¹⁸

²¹³ Kosswig to Senator Landahl, Hamburg, 11 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), p. 3.

²¹⁴ Kosswig to the dean of the Faculty of Mathematics and Natural Sciences, Hamburg, 4 December 1959, HSA, 361-6_IV 2358, p. 2.

²¹⁵ Mevius to Senator Landahl, 19 January 1960, HSA, 364-13 Mat. Nat. 441312 (signed carbon copy) [also in HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) (signed carbon copy)].

²¹⁶ The appointment of Mevius, who had to resign from his rectorate in Münster due to a corruption scandal, was, in fact, a punitive transfer, which the University of Hamburg initially resisted (Heiber 1992: 543–553).

²¹⁷ Telephone announcement by Dr Meins, 7 December 1959, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970), document no. 62.

²¹⁸ Excerpt from the minutes of the faculty meeting of 27 January 1960, item 9 (umwelt research), HSA, 364-13 Mat. Nat. 441312. For Herbert Heran, see Schuster 1993.

It is unclear whether the lecture took place. In any case, Heran decided to stay in Graz because an institute was to be built for him there from American foundation funds.²¹⁹

In February 1961, Helmut Meins from the School Board, University Section, recorded in a note that the dean had confirmed to him that a successor for Sauer had been found in the meantime, who was now being rehabilitated.²²⁰ Unfortunately, the note does not mention the name of the candidate. The whole affair seems to have come to nothing.

The Department of Biology, Ecology, and Ethology of Animals (Institute for Umwelt Research), officially incorporated into the Zoological State Institute on 1 April 1960,²²¹ still appeared in the lecture timetables up to and including the summer semester of 1966, but usually without the name of its head being mentioned. Only in the course catalogues from the winter term 1961/1962 to the winter term 1964/1965 is Sebastian Adam Gerlach, initially a private lecturer, later a professor, named as being in charge of the Department. However, no archival records of Gerlach's activities can be found. As part of the restructuring of the Zoological State Institute as a result of the establishment of a second chair of zoology, the subdivision into departments was generally abandoned as of the winter semester 1966/1967.

A memo dated June 1970, apparently in connection with an enquiry from Thure von Uexküll, stated that the university administration knew nothing about behavioural research at the Zoological Institute. A consultation with Prof. Henriette Oboussier revealed that behavioural research had been absorbed into the Department of Ecology, which was represented by the private lecturer Dr Franck. Significant of the situation of even the "usual" behavioural biology that was by no means easy at the beginning of the 1970s is the following remark: "Mrs Oboussier is incidentally of the opinion that behavioural research, after it

²¹⁹ File note by Meins (judging by the signature), 7 July 1960, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970).

²²⁰ Handwritten note by Meins, dated 23 February 1961, on the back of a letter from Kosswig to him, dated 2 November 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970).

²²¹ Order (*Verfügung*) by Senator Landahl, 20 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970); Hamburg's School Board, University Division, to Rector of the University of Hamburg, to the dean of the Faculty of Mathematics and Natural Sciences, and to Director of the Zoological State Institute and Zoological Museum, Hamburg, 22 January 1960, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970) [also in HSA, 364-13, Mat. Nat. 441313 [certified copy], and in HSA, 131-13_353 (certified copy)].

was brought to blossom by Lorenz, is overrated in the public and will hardly be expandable zoologically in the long run.”²²²

5. Epilogue

In his valuable account of the impact of Uexküll’s doctrine of the *umwelt* on modern ethology, Franck (1999), in his student days a contemporary witness of the last years of the Hamburg Institute for Umwelt Research and later professor of ethology at the University of Hamburg, has demonstrated how internal factors within science had permitted only partial incorporation of Uexküllian concepts into modern ethology, such as Uexküll’s notion of schema, which formed the groundwork for the later development of Lorenz’s ‘innate releasing mechanism’ (*angeborenes auslösendes Schema*) (Lorenz 1935). In contrast, other ideas, such as Uexküll’s vitalistic and teleological concept of ‘planfulness’ or ‘conformity to a plan’ or ‘conformity with a plan’ (*Planmäßigkeit*) (Uexküll 1920a: 196–259, 1921: 46, 1925, 1926: 270–362, 1928: 198–233, 1935/1936, 1938: 191–192; Brentari 2015: 236–238; Hoffmeyer 2004: 73–84) and his rejection of Darwin’s theory of evolution by natural selection (Kull 2004: 104–109; Brentari 2015: 129–132; Gutmann 2004: 172–173), were incompatible with comparative ethology, which was from its beginning evolutionarily oriented, excluding the assumption of super-mechanical abilities (*übermaschinelle Fähigkeiten*) (Uexküll 1928: 97) and properties in living beings.

Nevertheless, as Franck (1999) emphasizes, modern ethology can learn from Uexküll’s approach that analysis must always be followed by synthesis; that is, physiological ethology must not be isolated from ecological ethology, that is, the mechanisms of behaviour and the meaning of behaviour must be considered in an integrative manner.

In addition, the timeliness and indispensability of Uexküll’s approach in biological research have been demonstrated, among others, by Mäekivi (2016) and Tønnessen (2016) using Uexküll’s concept of the *umwelt* to analyse the relations and adjustments of wild animals to urban environments, and by Caves, Nowicki and Johnsen (2019), who argue that Uexküll’s doctrine is apt to avoid common biases in cases where certain stimuli are perceived both by humans and

²²² File note, dated 10 June 1970, Subject: Institute for Umwelt Research, HSA, 364-5 I Universität I, no. K 20.01.501, vol. 2, Institut für Umweltforschung (1947–1970). The memo bears the handwritten notes “Telephone call University of Ulm requested” and “Telephone call with v. Uexküll, Ulm”, which obviously refer to Thure von Uexküll, who held a professorship for internal medicine and psychosomatics at the University of Ulm.

by animals. Caves, Nowicki and Johnsen (2019: 1452) distinguish three different biases of this sort, namely making “untested assumptions about how sensory information is perceived, based on how we perceive or measure it”, attributing “undue significance to things that we ourselves perceive as complex or striking”, and assuming “animals are doing the math, that is, that they perceptually divide sensory stimuli the same way that we do as scientists when quantifying stimuli (e.g., separating color into hue, saturation, and brightness)”.

It is striking and astonishing that in the article by Caves, Nowicki and Johnsen the notion of ‘biosemiotics’ is not mentioned a single time. This is a phenomenon that occurs frequently. For instance, in their fascinating description of the spider *Portia fimbriata*’s signals and their reception by potential prey, Jackson and Cross (2011: 142) conclude that a human observer at least has to try to interpret spider behaviour from the spider’s point of view. Alas, they refer to neither Uexküll nor biosemiotics.

The principles of biosemiotics with Uexküll’s doctrine of umwelt as one of its major zoological roots (Deely 2001, 2004; Jämsä 2001; Kull 1999, 2001; Sebeok 1972: 61, 1989, 2001) are still much too little known in their potential fields of application. Generally speaking, as Schult, Preik and Kirschner (2021: 168–169) have stated, there is only a slowly spreading tendency to incorporate biosemiotic principles and approaches into the biosciences, and little has changed since the 1980s and 1990s concerning biosemiotics’ actual role in the life sciences. One reason for this situation might lie in a principal communication problem between different fields of biological research. As this contribution has tried to show, such barriers have a long history.

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Das institutionelle Schicksal der Uexküllschen Umwelttheorie an der Universität Hamburg

Aufgrund von Jakob von Uexkülls spezifischer Umwelttheorie war das Institut für Umweltforschung an der Universität Hamburg, das von ihm 1928 gegründet worden war, eine weltweit einzigartige Einrichtung zur ganzheitlichen Erforschung des Verhaltens von Tieren und ihrer Wahrnehmung. Uexkülls vitalistischer und teleologischer Ansatz sowie seine kompromisslose antidarwinsche Einstellung isolierten ihn jedoch zunehmend. Als 1935 im Rahmen seiner anstehenden Pensionierung die Schließung seines Instituts drohte, biederte sich Uexküll in einem Schreiben an den Reichsminister für Wissenschaft, Erziehung und Volksbildung den Nationalsozialisten an. Uexkülls Brief dient als Ausgangspunkt für eine detaillierte Diskussion seines Verhältnisses zum Nationalsozialismus.

Da Uexkülls Umwelttheorie für die Ausbildung von Führhunden und anderen militärisch nutzbaren Tieren verwendet werden konnte, überlebte das Institut. Allerdings erwies es sich als schwierig, einen geeigneten Nachfolger für Uexküll zu finden, da kaum jemand unter den deutschen Zoologen Friedrich Brock, dem von Uexküll bevorzugten Kandidaten, die Originalität Uexkülls zutraute. Der bedeutendste Gegner war Berthold Klatt, Ordinarius für Zoologie an der Universität Hamburg, der sich von der Umwelttheorie keinen nennenswerten Fortschritt in der Zoologie versprach. Nach Brocks Tod im Jahre 1958 versuchte der eingeschworene Kreis von Anhängern der Uexküllschen Umwelttheorie vergeblich, einen Nachfolger aus ihren Reihen durchzusetzen. 1959 wurde auf Veranlassung Kosswigs, Klatts Nachfolger auf den Lehrstuhl für Zoologie, Franz Sauer Brocks Nachfolger. Ein polemischer Zeitungsartikel, verfasst von Gösta von Uexküll, rief jedoch einen Skandal hervor, in dessen Gefolge Sauer kündigte. Das Institut für Umweltforschung wurde 1960 in eine Abteilung des Zoologischen Instituts umgewandelt und führte noch bis 1966 ein Schattendasein in den Vorlesungsverzeichnissen.

Das Schicksal des Uexküllschen Forschungsinstituts hing somit hauptsächlich von externen und persönlichen Einflussfaktoren ab oder, um mit Uexküllschen Begriffen zu sprechen, von den Umwelten der Protagonisten und Antagonisten.

Uexkülli omailmateooria institutsionaalne saatus Hamburgi ülikoolis

Jakob von Uexkülli omailmateooria tõttu oli Hamburgi ülikooli 1928. aastal rajatud omailmauringute instituut maailmas ainulaadne teadusasutus, kus holistlikult uuriti loomade käitumist ja taju. Kuid Uexkülli vitalistlik-teleoloogiline lähenemine ning tema kompromissitu darwinismivastane hoiak jätsid ta üha suuremasse isolatsiooni. Kui tema pensioneerumise tõttu 1935. aastal kerkis päevakorrale instituudi sulgemine, püüdis Uexküll kirjas teadus-, haridus- ja kultuuriministrile pälvida natsionaalsotsialistide soosingut; see on lähtekohaks artiklis esitatud üksikasjalisele käsitlusele Uexkülli suhetest natsionaalsotsialismiga.

Et omailmateooriat sai kasutada juhtkoerte ning teiste sõjaväele kasulike loomade väljaõpetamiseks, jäi instituut alles. Kuid Uexküllile sobiva järglase leidmine osutus raskeks, sest praktiliselt ükski Saksa zooloog ei uskunud, et Uexkülli eelistatud kandidaat Friedrich Brock oleks oma mõtete algpärasuselt Uexkülli tasemel. Brocki ametisse-

määramise kõige olulisem vastane oli Hamburgi ülikooli zooloogiaprofessor Berthold Klatt, kes ei oodanud Uexkülli omailmateoorialt mingit olulist edasiminekut zooloogia osas. Pärast Brocki surma 1958. aastal üritas Uexkülli omailmateooria ustavate pooldajate ringkond asjatult läbi suruda omaenda ridadest pärinevat mantlipärijat. Klattile zooloogia õppetooli juhina järgnenud Curt Kosswigi algatusel sai Brocki järel tema ametikoha Franz Sauer 1959. aastal. Ent Gösta von Uexkülli poolt kirjutatud poleemilisest artiklist lahvatas skandaal, mille järel Sauer ametist tagasi astus. 1960. aastal sai omailmauringute instituudist zooloogia instituudi osakond, mis loenguplaanides säilis 1966. aastani.

Seega sõltus Uexkülli uurimisasutuse saatus suurel määral välistest ja isiklikest teguritest või, Uexkülli-päraselt väljendudes, peategelaste ja nende antagonistide omailmadest.