

Uexküll studies after 2001

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Abstract. Jakob von Uexküll's (1864–1944) work was influential at the time of the biosemiotic turn in semiotics in the 1990s and, together with the hermeneutic and phenomenological approaches, laid the basis for a semiotic turn in biology without losing a connection to the morphology and physiology of organisms. His work appears to be attractive and promising in transforming the culture–nature divide into an understanding of the difference between the living and the non-living. The biological study of subjectivity makes the Uexküllian approach pertinent to the 21st-century changes both in the humanities and in biology, as the acceptance of his theoretical biology marks the start of a post-Darwinian era after the long period of neo-Darwinism that dominated the 20th-century biological thought. A review and bibliography of 20th-century Uexküll studies was published in 2001; the following provides a bibliography of Uexküll studies in the two decades after 2001.

Keywords: bibliography; biosemiotics; history of ideas; Jakob von Uexküll; philosophy of biology; theoretical biology; umwelt

A contemporary and colleague of Jakob von Uexküll, physiologist Leon Asher (1865–1943) found Uexküll's work as important for biology as Albert Einstein's had proved for physics – for it changed the worldview (Asher 1922: 477). Uexküll's work was rather well-known and popular in the first decades of the 20th century; however, it was not only forgotten, but even considered largely inappropriate (if not wrong) in biology since the formulation of the Modern Synthesis (neo-Darwinism) and the growth of quantitative biology in the 1930s. However, it has reappeared on the scene a hundred years later. Uexküll's phenomenon is remarkable because his fall and rise coincide with the rise and fall of neo-Darwinism, although this occurs in the opposite direction.

Uexküll has turned from an all but forgotten local scholar into a global figure acknowledged in several academic fields. The scope and fields of interest of the scholars who have found Uexküll's understanding of living beings, their cognition

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and behaviour, as well as his approach to biology in general, valuable and worth learning from, is astoundingly broad and varied. Since the “rediscovery” of Uexküll in the late 1970s, the number of works published about him has been showing a continuous growth, especially after 2001. The following provides some hypotheses as to why Uexküll’s work is so attractive and what makes the study of his views especially interesting.²

1. Uexküll studies: Publications since 2001

In 2001, a multi-author interdisciplinary volume appeared about Uexküll’s work (*Semiotica* 134 – Kull 2001a), covering Uexküll Studies in the 20th century. That volume included a full bibliography of Uexküll’s works, including reprints and translations (Kull 2001b: 15–39), as well as a bibliography of works about Uexküll until 2001 (Kull 2001b: 39–59). This bibliography of writings about Uexküll contains works that have been published after that date.³ It includes:⁴

- monographs on Uexküll (Brentari 2011; 2015; Gens, H. 2014; Mildemberger 2007a);
- edited volumes (Berthoz, Christen 2008; Michelini, Köchy 2020; Sokol Chang 2009);
- special issues of journals (*Journal of Comparative Psychology* 116(2), 2002; *Sign Systems Studies* 32(1/2), 2004);
- books that interpret Uexküll’s work (Bassanese 2004; Block 2016; Borges de Souza, Araujo 2013; Buchanan 2008; Clausberg 2006; Fuster 2003; Harrington 2002; Hoffmeyer 2008; Hogenhuis 2009; Kliková, Kleisner 2006; Magnus 2002; Maran *et al.* 2016; Martinelli 2010; Mildemberger, Hermann 2014; Parikka 2011; Pollmann 2018);

² Let me add here two remarks made in the correspondence from our biosemiotics seminar called the Biosemiotics Glade: “One of my favorite parts of the biosemiotics project is the revisiting of [...] forgotten or neglected thinkers of the past to see what we might learn from them or, if nothing else, how far ahead of their time they were. Not a lot of other forward-looking scientific projects do this as often or as well as biosemiotics does, I think, and that is something that I’ve always admired about our approach” (Donald Favareau, 4 September 2020) and “I predict that this will be the decade that the rest of biology finally recognizes the centrality of semiosis” (Terrence Deacon, 24 August 2020).

³ Thus the articles that appeared in the special issue of *Semiotica* (Kull [ed.] 2001a) will not be listed here.

⁴ With a few exceptions, this (certainly incomplete) list includes only classic academic publications (unfortunately in a limited number of languages), in which Uexküll’s work is the central focus, or has been approached to a remarkable extent.

- dissertations (Castro Garcia 2009; Clements 2018; Magnus 2007; Mänty 2015; Tønnessen 2011b);
- anthologies publishing his work (Favareau 2010a; Maran *et al.* 2011; Stjernfelt, Bundgaard 2011);
- more than a hundred and sixty important research articles and essays that interpret Uexküll's work (e.g., Allen 2014; Alrøe, Noe 2012; Alsina Calvés 2018; Amrine 2015; Araújo, A. 2012; 2016a; 2016b; 2018; 2020; Araújo, E. F. 2004; Augustyn 2009a; 2009b; 2020; Bacarlett Pérez 2014; Becker 2020; Beaver 2016; Beaver, Tønnessen 2013; Bégout 2013; Beloff 2017; Berque 2016a; 2016b; 2017; Berthoz 2008; Bibace 2009; Biedarieva 2010; Borck 2020; Brentari 2009; 2013; 2016; 2018a; 2018b; 2019; 2020; Brier 2012; Brincker 2012; Buchanan 2018; Bueno-Guerra 2018; Burghardt 2008; Champion 2020; Carapezza 2007; 2013; Caves *et al.* 2019; Chamois 2016; Champagne 2011; Chang 2004; Chávez Barreto 2019; Cheung 2004; 2005; 2006; Chien 2004; 2005; 2006a; 2006b; 2020; Choe 2016; Chrulew 2020; Cimatti 2020; Clements 2011; 2016; Cruz *et al.* 2016; Deely 2004; Despret, Galetic 2007; Di Paolo, L. D. 2011; Doré 2010; Drechsler 2009; Erlmann 2012; Esbjörn-Hargens 2017; Esposito 2020; Fagot-Largeault 2008; Feiten 2020; Feiten *et al.* 2020; Ferreira, Caldas 2013; Feuerhahn 2009; Firenze 2019; Fultot, Turvey 2019; Gens, J.-C. 2010; 2012; 2013; 2014; Gnerre 2007; Goetz 2007; Greaves 2008; Guidetti 2013; 2017; Gutmann 2004; Haas 2018; Hendlin 2016; Heredia 2011a; 2011b; 2020; Hoffmeyer 2004; Hope 2010; Ingold 2008; Jürgens 2017; Kaasch 2014; Kleisner, Maran 2014; Knyazeva 2014; 2015; Köchy 2007; 2015; 2020; Koenderink 2015; Koutroufinis 2016; Krüger 2020; Kudzus 2015; Kull 2004; 2010; 2018; 2020; Kull *et al.* 2009; Kull, Lotman 2012; Kynast 2010; 2012; Le Bot 2016; Linask *et al.* 2015; Loo, Sellbach 2013; Magnus 2011a; 2011b; Magnus, Kull 2012; Mandik, Clark 2002; Martinelli 2004; Mazzeo 2020; Meacham 2016; Michelini 2020a; 2020b; Mijung 2014; Mildenberger 2005; 2006; 2007b; 2009; 2010; Moyle 2020; Muñoz Pérez 2015; Ostachuk 2013; 2020; Padial 2015; Partan, Marler 2002; Pick 2015; Pieron 2010; Pollmann 2013; Potter 2016; Potthast 2014; Puumeister 2019; Rasini 2008; Rieppel 2016; Rodríguez Higuera 2017; Romano 2009; Rütting 2004a; 2004b; Savoth 2011; Schmieg 2017; Schroer 2020; Serafimova 2017; Sheringham 2010; Shores 2017; Sokol Chang 2009b; Steckner 2004; Stella 2007; Stella, Kleisner 2010; Stjernfelt 2011; Tamm, Kull 2016; Tedesco 2014; Tønnessen 2003; 2009; 2011a; 2015b; 2015c; 2018; Tønnessen *et al.* 2016; Uexküll, T. 2004; 2010; Uexküll, Geigges, Herrmann 2002; 2010; Uexküll, Wesiack 2012; Uhall 2016; Umbelino 2013; Undusk 2011; Vagt 2010; Valsiner, Lescak 2009; Vehkavaara, Sharov 2017; Vörös 2017; Wagoner, Rosenbaum 2009; Weber 2004; Wuketits 2014; 2015);

- forewords, afterwords and introductions to Uexküll publications (Di Paolo, E. A. 2020; Favareau 2010b; Heredia 2014; 2016; Kull, Magnus 2012; Lestel 2010; Mazzeo 2010; Sagan 2010; Vörös 2018; Winthrop-Young 2010);
- some book reviews and notes about events connected with Uexküll (Campero 2016; 2018; Geroux 2012; Ginn 2014; Gravitte 2012; Kull, Rütting 2004; Magnus, Kull 2009; Rütting 2004c; Surel 2014).

Several new translations of Uexküll's writings appeared in this period. Here are some of these:

- into English: Uexküll 2010a; 2013; 2019; Uexküll, Uexküll 2004;
- into Estonian: Uexküll 2012a;
- into French: Uexküll 2010b;
- into Italian: Uexküll 2010c; 2015;
- into Japanese: Uexküll 2012b; 2012c;
- into Polish: Uexküll, Kriszat 2016;
- into Slovenian: Uexküll 2018;
- into Spanish: Uexküll 2014; 2016.

Some texts by Uexküll have been reprinted (e.g., the English translations Uexküll 2010d; 2011a; 2011b; Japanese translation Uexküll, Kriszat 2005; as well as Mildenerger, Hermann 2014, that includes a facsimile publication of Uexküll 1921).

Nevertheless, much remains to be done in the field of translating Uexküll into English, particularly as his main work, the second edition of *Theoretische Biologie* (Uexküll 1928) has never appeared in English. It includes important updates in comparison to the first edition (Uexküll 1920b), the old translation of which (Uexküll 1926) is not very good either due to the inconsistency in the translation of terms. The new translation of *Streifzüge...* (Uexküll 2010a) does not make a proper difference between the central concepts of 'umwelt' and 'environment', using the latter instead of the former.

In 2004, the *Jakob von Uexküll-Archiv für Umweltforschung und Biosemiotik* was established in the University of Hamburg. The archive maintains the library of the former *Institute für Umweltforschung*, which was led by Jakob von Uexküll in the 1920s and 1930s. The inauguration of the *Archiv* took place during the international symposium "Signs and the design of life – Uexküll's significance today", in January 9–11, 2004, in the University of Hamburg.⁵ The archive was initiated by Torsten Rütting, who was also the organizer of the symposium (Rütting 2004c).

⁵ The papers from this symposium, together with the papers from the meeting "Cassirer, Lotman, Uexküll: Between biology and semiotics of culture", held in Tartu, Estonia, in May 2004, were published in the special issue of *Sign Systems Studies* vol. 32 (Kull, Rütting 2004).

The *Jakob von Uexküll Centre* in Tartu, established already in 1993, continues its activities (Magnus *et al.* 2004; Magnus 2011c). Meanwhile, its archives have also grown considerably, particularly as in 2012 the *Centre* received a large collection of Jakob von Uexküll's correspondence and manuscripts, formerly kept by the Uexküll family in Freiburg, that in a large part have not yet been studied by researchers. These materials have now been made available for researchers via the University of Tartu Library.⁶ A series of Jakob von Uexküll Lectures has been organized at the University of Tartu since 2014, when the first talk in the series was given by Wendy Wheeler.

2. Some trends in Uexküll studies

As a comparison between the current bibliography and the earlier bibliography that covered the works until 2001 (Kull 2001b) reveals, more has been written about Uexküll within the first two decades of the 21st century than throughout the whole of the 20th century. The following themes explain at least some of the study interests.

(a) *Theoretical biology*. In recent decades a profound change has been taking place in biological knowledge, which can partly explain the remarkable growth of interest in Uexküll's work. This paradigmatic change is rocking the fundamentals of evolutionary biology in particular. Instead of assuming evolutionary innovations stemming only from genetic mutations and differential reproduction of genotypes (natural selection), the alternative explanation gives an important role to the activity of living agents, to the choices that organisms make on the basis of meaning-making. This new theoretical biology is a semiotic biology, and some formulations of its first principles – or hints to these – can be found in the works of Jakob von Uexküll.⁷

(b) *Organisms as subjective interpreters*. The current change in biology is not limited to the change in evolutionary theory as a theory integrating biology if not since Darwin, then at least since the 1930s. Biology is re-introducing subjectivity into the models it employs. This has been catching the attention of philosophers – and from a scientific aspect, semioticians. After many earlier attempts to find a place for intentions, feelings, and the mind in organic systems, the biosemiotic project (if developed with care) looks very promising in modelling these phenomena.

⁶ Fond 201. See the description of its content in http://dspace.ut.ee/bitstream/handle/10062/47408/Uexkyl_nimistu.pdf.

⁷ See a similar conclusion in Winthrop-Young 2010: 242–243, and in Peterson *et al.* 2018.

Uexküll's model of the functional circle has become interpreted as a fundamental model of meaning-making and semiosis (Krampen 1997), which can also be described as a mechanism of interpretation, or choice-making. This mechanism (or rather a bundle of organic choice-mechanisms) has not been finally discovered yet, i.e. it has not been described in sufficient detail. However, Uexküll's model of the functional circle together with the phenomena that the functional circle creates – meanings, signs and the *umwelt* – obviously lies at the core of the semiotic biology. Pioneering studies of mechanisms of meaning-making in simple organisms (although organisms can never be simple) were carried out by Uexküll.

(c) *Environmental humanities*. Uexküll's approach fits well ecological themes in the humanities and the appearance of fields such as environmental humanities, human-animal studies, post-humanities, ecocritical studies. In this context, we can also find essays using Uexküll's ideas in cinema research, literature studies, or ecophilosophy; this is extended to using his ideas in art projects.

(d) *History of ideas*. This aspect of interest stems from the fact that Uexküll's thought has inspired several other influential scholars, both in biology and in other disciplines. Indeed, Uexküll, “a forerunner of biosemiotics and ethology, has influenced Heidegger, Deleuze and Guattari, Agamben, Merleau-Ponty, and the development of posthumanism” (Gravitte 2012: 2018). Accordingly a remarkable number of studies focuses on the relations of Uexküll's thought with the ideas of other scholars, among them:

Giorgio Agamben (Mazzeo 2020),
 Pierre Alféri (Sheringham 2010),
 Karl Ernst von Baer (Gens 2014; Tamm, Kull 2016; Undusk 2011),
 Walter Benjamin (Clausberg 2006; Pollmann 2018),
 George Berkeley (Serafimova 2017),
 Hans Blumenberg (Borck 2020),
 Urie Bronfenbrenner (Cruz *et al.* 2016)
 Frederik Buytendijk (Fagot-Largeault 2008),
 Georges Canguilhem (Chien 2006b; Feiten *et al.* 2020; Ostachuk 2020),
 Ernst Cassirer (Brentari 2020; Chien 2006a; Stjernfelt 2011; Weber 2004),
 Stanley Cavell (Uhall 2016),
 Charles Darwin (Beever, Tønnessen 2013),
 Gilles Deleuze (Amrine 2015; Brentari 2019; Buchanan 2008; Cimatti 2020; Feiten *et al.* 2020; Goetz 2007; Greaves 2008; Heredia 2011b; Pieron 2010; Shores 2017),

Wilhelm Dilthey (Gens 2014),
 Hans Driesch (Alsina Calvés 2018; Kaasch 2014),
 Albert Einstein (Clausberg 2006),
 Jean Gagnepain (Le Bot 2016),
 Arnold Gehlen (Firenze 2019; Rasini 2008; Stella 2007),
 James Gibson (Fultot, Turvey 2019),
 Johann W. Goethe (Amrine 2015; Kudzus 2015),
 Kurt Goldstein (Ostachuk 2020),
 Félix Guattari (Cimatti 2020; Greaves 2008; Shores 2017),
 Max Hartmann (Kaasch 2014),
 Heini Hediger (Chrulow 2020),
 Georg W. Hegel (Padial 2015),
 Martin Heidegger (Alsina Calvés 2018; Bassanese 2004; Berque 2016b; Borges de
 Souza, Araujo 2013; Buchanan 2008; Chien 2006a; Firenze 2019; Goetz 2007;
 Michellini 2020b; Muñoz Pérez 2015; Pieron 2010; Romano 2009),
 Louis Hjelmslev (Chávez Barreto 2019),
 Imanishi Kinji (Berque 2017),
 William James (Araújo 2016b; 2018; Despret, Galetic 2007),
 Franz Kafka (Uhall 2016),
 Immanuel Kant (Alrøe, Noe 2012; Borges de Souza, Araujo 2013; Esposito 2020;
 Guidetti 2013),
 Jacques Lacan (Chien 2006b),
 Gottfried W. Leibniz (Guidetti 2013),
 Aldo Leopold (Beever 2016; Gens 2012; 2013; Potter 2016),
 Konrad Lorenz (Brentari 2009; Burkhardt 2005; Mildenerger 2005; Stella 2007),
 Juri Lotman (Andrews 2003; Chang 2009; Kull, Lotman 2012; Tamm, Kull 2016),
 Niclas Luhmann (Alrøe, Noe 2012),
 Rudolf Magnus (Hogehuis 2009; Magnus, O. 2002),
 Humberto Maturana (Alrøe, Noe 2012),
 Quentin Meillassoux (Savoth 2011),
 Maurice Merleau-Ponty (Amrine 2015; Bacarlett Pérez 2014; Borges de Souza,
 Araujo 2013; Buchanan 2008; Feiten *et al.* 2020; Moyle 2020; Ostachuk 2013;
 Umbelino 2013; Vörös 2017),
 Adolf Meyer-Abich (Kaasch 2014),
 Martha Muchow (Linask *et al.* 2015),
 Wilhelm Ostwald (Undusk 2011),
 Charles S. Peirce (Alrøe, Noe 2012; Augustyn 2009a; Clements 2018),
 Helmuth Plessner (Köchy 2015; Krüger 2020; Rasini 2008; Schmiege 2017; Vörös
 2017),

Adolf Portmann (Fagot-Largeault 2008; Kleisner, Maran 2014),
 Luis Prieto (Chávez Barreto 2019),
 Gijsbertus G. J. Rademaker (Hogehuis 2009)
 Max Scheler (Becker 2020; Cusinato 2018),
 Hermann Schmidt (Bissell 2011),
 Thomas A. Sebeok (Chang 2009; Deely 2012),
 Francisco Varela (Alrøe, Noe 2012),
 Viktor von Weizsäcker (Stoffels 2003; Tedesco 2014),
 Alfred N. Whitehead (Araújo 2020),
 Peter Zapffe (Serafimova 2017),
 Victor Zuckerkandl (Amrine 2015).

The predominance of philosophers in this list is probably due to the fact that there are many more historians of philosophy than historians of biology or semiotics working in the academy. Still, besides Heidegger, Merleau-Ponty, Deleuze, Plessner and other philosophers who dominate the study interest, also some semioticians (Cassirer, Peirce, Lotman, Sebeok, Hjelmslev, Prieto), biologists (Baer, Darwin, Driesch, Lorenz, Maturana, Meyer-Abich, Portmann, Hediger), environmentalists (Leopold), and writers (Goethe, Kafka, Zapffe) appear.

The list is an obvious symptom of a change in the intellectual field in which Uexküll has become a classic author within the last couple of decades. Moreover, he appears to have the status of a classic in several fields – in biosemiotics (Favareau 2010a), in zoosemiotics (Martinelli 2010; Maran *et al.* 2011), in general semiotics (Krampen *et al.* 1987; Deely 2004; 2012: 214), in general biology (e.g., Hassenstein 2001), and in philosophy of biology (Gutmann 2004; Michelini, Köchy 2020). He is also considered one of the key thinkers on environmental issues (Brentari 2018b). Eagleman (2012: 145) admits: “I think it would be useful if the concept of the *umwelt* were embedded in the public lexicon. It neatly captures the idea of limited knowledge, of unobtainable information, and of unimagined possibilities”.

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Икскюлевские исследования после 2001 года

Работы Якоба фон Икскюля (1864–1944) оказали значительное влияние на био-семиотический поворот в семиотике в 1990-ые годы. Кроме того, вместе с герменевтическим и феноменологическим подходами они заложили основу семиотического поворота в биологии, не теряя при этом связи с морфологией и физиологией. Исследования Икскюля являются важными и многообещающими для замены оппозиции концепций культуры и природы пониманием различия между живым и неживым. Биологическое исследование субъективности делает подход Икскюля совместимым с достижениями 21-ого века как в гуманитарных, так и в естественных науках. Принятие теоретической биологии Икскюля современными учеными указывает на начало пост-дарвиновского периода в биологии, пришедшего на смену длительному периоду неodarвинизма, который доминировал в биологической мысли прошлого века. Обзор и библиография посвященных Икскюлю исследований, выполненных в двадцатом веке, были опубликованы в 2001 году; настоящая статья предлагает обзор и библиографию соответствующих исследований, имевших место в течение двух последних десятилетий: за это время Икскюлю было посвящено больше работ, чем за весь прошлый век.

Uexkülli-uuringud pärast aastat 2001

Jakob von Uexkülli (1864–1944) töödel oli suur mõju biosemiootilise pöörde perioodil semiootikas 1990ndatel aastatel, mis koos hermeneutilise ja fenomenoloogilise lähene-misega on rajanud aluse semiootiliseks pöördeks bioloogias, kaotamata seejuures sidet morfoloogia ja füsioloogiaga. Uexkülli tööd on osutunud inspireerivaiks ja kasutatavaiks kultuuri ja looduse lahutatud käsitluste asendamisel elusa ja elutu erinevuse mõistmisega. Bioloogiline subjektiivsuse uurimine teeb tema vaated kokkusobivaiks XXI sajandi aren-gutega nii humanitaarteadustes kui bioloogias. Uexkülli teoreetilise bioloogia omaksvõtt

on oluliseks postdarwinliku perioodi alguse tähiseks pärast pikka uusdarwinismi perioodi, mis oli valdav XX sajandi bioloogias. Ülevaade XX sajandi Uexkülli-uuringuist koos põhjaliku bibliograafiaga on avaldatud aastal 2001; käesolevas töös tuuakse Uexkülli-uuringute bibliograafia järgnenud kahe aastakümne kohta. Osutub, et see on mahukam kui terve eelmise sajandi jooksul tehtu kokku.