

Roundtable:

The future of culture in more-than-human worlds of being

Editorial postscript

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The authors' contributions to the roundtable have greatly enhanced our understanding of the science of culture in the 21st century. Their work encompasses a variety of disciplines, including the natural sciences, social sciences, and humanities. Notable fields represented are biology, semiotics, computer science, philosophy, and Earth system science. A shared understanding is emerging, which I would like to summarize in this postscript. This is my personal perspective, and I want to express my gratitude to all the authors who shared their insights with us. In my opinion, the roundtable establishes a research paradigm that deserves further development into a more precise and systematic research program. The Cultural Science journal will support this agenda in the future.

As a starting point, I would like to share my perspective on the history of cultural science. While only a few contributions explicitly state this, I believe the concept of the 'more-than-human' does not represent a radical departure from earlier traditions of cultural exploration, particularly those from the 19th century. This idea is supported by roundtable contributors such as Winfried Nöth, Lucia Santaella, and Thomas Hünefeldt, who emphasize Charles S. Peirce's critical role in moving away from anthropocentric views of culture. In a previous article in this journal (Herrmann-Pillath, 2018), I suggested that 'cultural science' is rooted in Wilhelm Dilthey's formulation of 'Geisteswissenschaften', a term that lacks a precise English translation. In contemporary Germany, the term 'Kulturwissenschaften' is often used, which translates to 'cultural science' literally, while differing significantly from the Anglophone concept of 'cultural studies'. *Geisteswissenschaft* encompasses all the humanities, rather than just the subfield of cultural studies, implying a focus on the 'human', thus also different from the understanding of cultural science as promoted here. However, the essential commonality lies in understanding 'Geist' as more-than-human. In other words, I argue that the study of more-than-human culture can indeed be traced back to the 19th-century *Geisteswissenschaft*.

This understanding can only be accurately expressed in English by using 'spirit' as a technical term from Hegelian philosophy, though doing so would be anachronistic. However, if we translate *Geist* as 'mind' in contemporary English, the fundamental Hegelian distinction between 'mind' and 'spirit'

would be lost. It is important to recognize that *Geist* pertains to human creative expression but also extends beyond human capabilities in terms of its evolution and the ways it influences these expressive acts. Thus, while *Geist* is undeniably human, as it unfolds within the human realm and excludes other species, it also transcends human limitations and cannot be reduced to the context of individual minds alone. *Geist* manifests through human creations, which possess their own existence, such as literary works, art, and architecture. A similar distinction was made by Karl Popper (1979), who, independent of Teutonic philosophy, introduced his concept of the 'three worlds.' In this framework, 'world 3' represents the creations of human minds, while 'world 2' refers to the domain of mental processes. World 3 is clearly 'more-than-human'.

Such views are not uncommon in contemporary social thought. A prominent figure that comes to mind (at least for me as an economist by training) is economist Friedrich Hayek, who famously stated that the market operates through human action but not by human design. He described the market as a type of supercomputer that guides human behaviour, emphasizing that it cannot be reduced to individual intelligence (Mirowski and Nik-Kah, 2017). For Hayek, the market is 'more-than-human', meaning that accepting market logic requires setting aside the very qualities that make us human—our emotions, empathy, and personal worldviews. This perspective is also rooted in 19th-century traditions, particularly in Ferdinand Tönnies' distinction between community and society. Tönnies viewed society as a 'hyperobject', in Morton's terminology, that abstracts from the tangible realities of human existence. He defined society within a capitalist framework, where the market serves as the medium of abstraction (Basso and Herrmann-Pillath, 2024). Hayek criticized humane evaluations of the market as remnants of community feeling and thinking. Hayek is not alone in envisioning the economy as 'more-than-human.' For instance, the system ontology promoted by sociologist Niklas Luhmann sharply distinguishes between humans and the systems in which they live.

Money serves as a prime example of a cultural construct that was explored from a more-than-human perspective at the turn of the 19th to the 20th century by two influential thinkers, Georg Simmel and Max Weber. Although money is created through human actions, once it enters the world, it acquires universal, transformative powers, further enhanced by artefacts like accounting ledgers. Their theories anticipated modern ideas about material agency and the performativity of artefacts (Malafouris 2013). Cultural phenomena have qualities that exceed human control and understanding, highlighting the complexity of emerging new forms of life. In this sense, viewing culture as 'more-than-human' resembles Hegel's approach to the concept of spirit—interpreting it as an independent ontological realm that unfolds according to its own logic. It is also important to note that Marx's analysis of capitalism, society, and culture aligns with this 'more-than-human' perspective.

Cultural science, methodologically speaking, can draw upon the extensive body of cultural analysis that has developed since the 19th century. However, it expands this analysis beyond the human domain as the primary focus of research. This shift marks a significant departure from a core theme of 19th-century *Geisteswissenschaft*. The contributions to this roundtable emphasize the important role of semiotics as a precursor to these developments. Emerging in the 19th century from two main traditions—those of Saussure and Peirce—semiotics has grown into a rich field of research that encompasses numerous disciplines (Chandler 2022). Despite its wide-ranging impact, semiotics is often viewed as a specialized subfield within these disciplines and is frequently overlooked as a foundational approach that could unify them. Semiotics focuses on signs as material objects that mediate actions and engage interpreters, who generate meaning through their interactions. This definition underscores why semiotics is not merely 'more-than-human', but is instead distinctly neutral, or 'a-human'. Consequently, it is misleading to classify subfields of semiotics, such as

ecosemiotics, as part of the 'environmental humanities' or to label semiotics as belonging exclusively to the humanities, even though it certainly holds a central position within *Geisteswissenschaft*, as previously discussed.

As John Hartley points out in his comment on the first draft of this postscript (see <https://culturalscience.org/editorial-postscript-vol-14/>), this status of semiotics as a foundation of cultural science is most evident in Lotman's conception of the 'semiosphere' which encompasses the totality of sign producing and processing processes on the planet that generate the forces that constitute all kinds of agents, subjectivities and creative processes. Indeed, Lotman's semiosphere can be seen as the seminal contribution to transcending the notion of *Geist* in the *Geisteswissenschaft* towards the more-than-human perspective of cultural science. Lotman belongs to the core of the semiotic tradition; however, as Martin Bohle points out in his comment on the postscript, there are others than the usual suspects, such as the philosopher of science Mario Bunge, who includes the analysis of semiotic systems in his general theory of emergent systemism.

In my approach to Peircean semiotics, I also reference the concept of 'information' as a foundational concept (Herrmann-Pillath 2013). Similar to the notion of signs, particularly in Peirce's understanding, the term 'information' is inherently 'a-human' and applicable across all scientific disciplines. This perspective has gained considerable acceptance, especially with the rise of computers. The computer, as a non-human metaphor, is crucial for understanding markets as 'more-than-human'. Cybernetics has laid the foundation for systems ontologies, such as Luhmann's. Today, it is widely accepted that information is not solely a human concept and is, therefore, not restricted to the humanities. In fact, information has become a foundational term in physics, and this perspective should also be applied to semiotics.

What makes culture a distinct semiotic phenomenon that is not exclusively tied to humans? Our contributors agree on several key points (in explicit relation to Peirce's semiotics, Thomas Hünefeldt).

First, subjectivity is fundamental. This concept does not refer to a human subject; rather, it highlights the difference between interpreting the world from a specific standpoint and an 'objective' perspective, often described as the 'view from nowhere'. Consequently, culture embodies a diversity of interpretive views and their coexistence.

Second, interpretations within a culture can be shared among entities that occupy different positions, meaning that culture encompasses various forms of mediation across irreducible subjectivities.

Third, culture can be transmitted over time among entities, even if those entities have limited lifespans. Culture aligns with various media of memory.

Fourth, this transmission is inherently imperfect; however, it also fosters cultural creativity and the emergence of novelty.

Finally, culture defines boundaries between different groups of interpreting entities, thereby influencing their identities as they perceive themselves and how they are perceived by others.

If we adopt this broad definition, it becomes evident that animals, similar to many existing types of machines, possess culture. Roundtable contributor Bronislaw Szerczynski argues that we can even extend this concept into the physical realm. Indeed, contributor Ellie Rennie highlights that blockchain technologies exhibit cultural characteristics by distinguishing between in-group and out-group nodes based on their reliability. In his comment on the first draft of this postscript, Thomas Hünefeldt provides an important insight regarding an unexpected reference to Bertrand Russell. In his lectures on the mind, Russell (1921) develops a theory that differentiates subjectivity from consciousness, reflecting a fundamental physical phenomenon known as relational positionality. He even suggests that the distinction between mind and matter should be resolved into a more

fundamental understanding of 'sensations' as the basic building blocks of reality. For cultural science, this indicates that culture is a universal aspect of reality, with human culture being just one of its many manifestations. Although Russell does not cite Peirce, the generalized notion of 'interpretant' as a phenomenon that extends beyond humans aligns well with Russell's views.

Limiting the definition of culture to humans alone is not scientifically sound; this perspective represents a form of cultural parochialism. The distinctively human culture can be characterized by its unique emphasis on defining boundaries, which manifests in two ways. The first is the distinction between culture and nature, which defines humans solely as cultural beings. The second involves reserving the term 'culture' for certain humans while categorizing others as 'barbaric' or animal-like. Therefore, cultural science should be reflexive and critically examine mainstream anthropocentric views of culture, recognizing that these views are themselves shaped by cultural perspectives and are not objectively scientific (Braidotti, 2019)

Debunking anthropocentrism in cultural science does not mean we should marginalize humans. This distinction is crucial, especially when considering the methodological challenge previously mentioned: our research on culture is itself a cultural activity. Consequently, a central question emerges: how can humans access and understand cultures that are 'more-than-human'? This inquiry represents a non-anthropocentric approach to a fundamental question in the humanities: How can we comprehend cultures that differ from our own?

One important lesson from the humanities is that there is not a truly 'objective' perspective on other cultures. Our understanding of different cultures depends on translation, which is inherently a subjective interpretation. This means, for example, that we cannot approach the culture of other animals in an 'objective' manner. However, we can establish a shared cultural framework, or, as roundtable contributor Cédric Suer describes it, a co-culture. Cultural studies have long embraced hybridization, moving away from the notion of a coherent and monolithic 'culture'. Like semiosis, culture consists of a continuous flow of interpretive actions and bricolage. In other words, *studying* non-human cultures involves *creating* 'more-than-human' cultures that encompass both humans and other beings. Roundtable contributors Anthony Milligan and Lena Springer argue that we should avoid making ontological commitments when assigning specific forms of cultural agency to different entities. Instead, we should adopt a pragmatic approach to interacting with these entities, guided by another Peircean concept known as the 'economy of research'.

For example, we may come to understand that machines have their own culture once they can communicate with each other, thus creating distinct identities within their collectives. Currently, engineers are facing fundamental challenges in understanding AI performance, especially in clearly identifying the causal relationships between inputs and outputs. This difficulty highlights a key aspect of subjectivity as an objective reality. We can gain insights into this by fostering co-cultures with machines, such as combining human and AI creativity in the arts and music, as discussed by Sebastian Trump in his roundtable contribution. Similarly, while we cannot access the Umwelts of animals as objective facts, we can interact with animals to create co-cultures, which is a central theme in zoosemiotics, as elaborated by roundtable contributor Nelly Mäekivi. These examples illustrate that co-cultures can emerge even without human involvement—between different species and among machines and animals. The critical element in all these processes is that humans create cultural artefacts that become mediators of co-cultures without implying that humans can understand the engaging other-than-human subjectivities. In his comment on the first draft of the postscript, Stanislav Roudavsky points to the role of architectural artefacts which can become bridges between human and other species subjectivities (<https://culturalscience.org/editorial-postscript-vol-14/>).

An important conclusion from this discussion brings us back to 19th-century scholarship, which significantly influenced the 20th century through the work of John Dewey. This scholarship reinstates key concepts of the humanities in an unexpected way. German idealism positioned the arts and sciences as equal forms of knowledge generation, a notion also supported by Dewey (2005). The creation of co-cultures is primarily an artistic endeavor, as there is no absolute 'view from nowhere' that can definitively ascertain which co-cultural creation accurately reflects the pre-contact non-human culture. Moreover, artistic approaches to understanding cultural differences promote knowledge through mutual understanding. By placing science and art on equal epistemological ground, we address the demand expressed by roundtable contributor John Hartley to include the field of physics within the scope of cultural science, thereby recognizing its cultural significance.

Building co-cultures requires a distinct ethical approach toward others. This presents a paradox, as we typically define culture by establishing boundaries, while co-culture involves breaking those boundaries down. Consequently, cultural science must be grounded in a generalized ethics of recognition and relationality, a concept emphasized by roundtable contributor Ronald Trosper, who draws on the rich resources of Indigenous knowledge and practices in relation to the more-than-human world. This ethical stance can significantly influence our cultural creativity, enabling cultural science to impact human culture as well. For instance, in his roundtable contribution, Stanislaw Roudavski provides an ethical framework for designing cities, buildings, and other human-made environments by focusing on more-than-human considerations. This co-cultural approach enhances our understanding of various cultures by fostering experiences that allow us to engage with them meaningfully. The cultural figure that embodies this perspective is not the scientist or engineer but the gardener, as roundtable contributor Astrid Schwarz asserts.

This observation highlights the importance of a productive dialogue between anthropocentrism and its alternatives, such as posthumanism, within the humanities. Since non-anthropocentric research on culture is conducted by humans, we cannot fully escape ethical anthropocentrism unless we abandon the fundamental idea of human autonomy upheld by German idealism. This implies that we need to adopt an ethics of inquiry that promotes a transformative approach to exploring the relationship between humans and the more-than-human world. Roundtable contributor Richard Grusin illustrates this point by arguing that when we study the lives of trees, we can also redefine our own cultural identity to become more 'tree-like'. Similarly, Martin Bohle asserts that culture plays a crucial role in the Earth's system and its broader physical dynamics, emphasizing that humans must take responsibility for shaping their culture accordingly.

Cultural science ultimately transcends the traditional boundaries of science as established in the 19th century, a period when science became separated from other fields of human knowledge that remained integrated within German idealism. This philosophical framework maintained 'natural philosophy' as a fundamental science grounded in a universal notion of spirit. In the term 'cultural science', the word 'science' does not suggest a reduction of cultural research to mere scientific analysis, as seen in approaches like evolutionary psychology. Instead, the 'cultural' aspect encompasses the 'science', bridging the gap between the two cultures of science and the humanities, a divide famously articulated by C.P. Snow (2018). Jason Pott's theory of embeddings provides the formal structure for this reintegration. His roundtable contribution ties up with Russell's attempt at overcoming the two cultures long before that concept was coined.

What does the fusion of the 'two cultures' mean in practice? Roundtable contributor Don Ross's work in comparative cognitive science offers a useful illustration. On one hand, we can scientifically investigate how specific environmental conditions have shaped the cognitive similarities between elephants and humans throughout evolutionary history. On the other hand, by understanding how

this cognitive convergence is expressed in various forms of memory, communication, and social behaviour, we can examine collaborative creative actions related to elephants. Furthermore, we can envision using artificial intelligence to create personas of individual elephants, making their culture more accessible to us while effectively launching co-cultural creativity between machines and elephants that transcends our design and understanding. This aligns with the growing number of projects that utilise AI to foster connections with other species (Bridle 2022). Cultural science is the discipline that encompasses and frames such efforts.

To conclude, this roundtable suggests a truly transdisciplinary view on culture, both in the sense that it is no longer the humanities which claim this terrain as theirs exclusively, but that culture is one of the bridging concepts that unify the sciences and the humanities, and in the sense that cultural science is not done from the detached standpoint of a scientific observer located 'nowhere' but that it engages creators of culture of all kinds, in the human domain the scientist and the non-scientist, and beyond, other species and machines. This is a challenge, none the least to editing a journal of cultural science: How can we expand the scope of contributors to other than humans? Truly creative AI contributions may be a starting point, giving AI the status of a recognized author, subject to procedures of peer review. How about other species? A first step is literary work that steps into the shoes of the other (Despret 2021). Let's move on!

References

- Basso, F. and Herrmann-Pillath, C.** 2014. *Embodiment, political economy and human flourishing: An embodied cognition approach to economic life*. Cham: Palgrave Macmillan.
- Braidotti, R.** 2019. *Posthuman knowledge*. Medford, MA: Polity.
- Bridle, J.** 2022. *Ways of being: beyond human intelligence*. London: Allen Lane an imprint of Penguin Books.
- Chandler, D.** 2022. *Semiotics: the basics*. Fourth edition. The basics. New York: Routledge.
- Despret, V.** 2021. *Autobiographie d'un poulpe: et autres récits d'anticipation*. Mondes sauvages. Arles: Actes Sud.
- Dewey, J.** 2005. *Art as experience*. New York: Berkeley Publ. Group.
- Herrmann-Pillath, C.** 2013. *Foundations of economic evolution: a treatise on the natural philosophy of economics*. Cheltenham, UK: Edward Elgar.
- Herrmann-Pillath, C.** 2018. "Dilthey and Darwin Combined? 19th Century *Geisteswissenschaft* for 21st Century Cultural Science". *Cultural Science Journal* 10, 1: 42–53. <https://doi.org/10.5334/csci.108>.
- Malafouris, L.** 2013. *How things shape the mind: a theory of material engagement*. Cambridge, Massachusetts: MIT Press.
- Mirowski, P. and Nik-Khah, E.** 2017. *The knowledge we have lost in information: the history of information in modern economics*. New York City: Oxford University Press.
- Morton, T.** 2013. *Hyperobjects: philosophy and ecology after the end of the world*. Posthumanities 27. Minneapolis: University of Minnesota Press.
- Popper, K.** 1979 *Objective knowledge: an evolutionary approach*. Rev. ed. Oxford [Eng.] : New York: Clarendon Press ; Oxford University Press.
- Russell, B.** 1921. *The Analysis of Mind*. <https://www.gutenberg.org/files/2529/2529-h/2529-h.htm>

Snow, C. P. 2018. *The Two Cultures and the Scientific Revolution*. Eastford, Connecticut: Martino Fine Books.

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