

*Commentary*

**Human uniqueness explored from the uniquely human perspective:  
Epistemological and methodological challenges**

Jana Uher \*

<sup>a</sup> *School of Human Sciences,  
University of Greenwich, United Kingdom*

\* Correspondence:

University of Greenwich  
Old Royal Naval College, Park Row  
London SE10 9LS, United Kingdom  
Telephone: +44(0)20-8331 9654  
E-mail: mail@janauher.com

**Abstract**

Exploring human uniqueness encounters fundamental challenges because we can approach this endeavour only from within our uniquely human perspective. The intrinsic presumptions that this involves may entail two types of anthropocentric, ethnocentric, and egocentric biases, which can influence research on both epistemological and methodological levels. Their impact may be particularly pronounced if quests for the origins of human sociality are based only on our knowledge about humans. Tomasello's (2019) research demonstrates that the comparative study of humans and nonhuman species offers unique opportunities to explore forms of social cooperation, underlying cognitive and meta-cognitive abilities as well as pathways in their ontological and (possible) phylogenetic development. It also shows that comparative approaches are essential to unravel the ways in which humans are indeed unique. But species comparisons are challenged by the need to consider inherent trade-offs between achieving operational comparability in empirical studies and establishing ecological validity for the species compared—challenges, which analogously occur in comparisons across human cultures as well. This shows that comparative research can also contribute meaningfully to methodology development in psychology.

*Key words:*

comparative psychology; species comparisons; epistemology; methodology; human uniqueness; behaviour

## 1. Introduction

What makes us uniquely human is one of the big questions of humankind—and one of the most challenging ones—because we can never step outside of ourselves as human beings and take an objective view on this peculiar species that we are. How extraordinary actually are our human abilities for joint agency and moral behaviour? Did their emergence in evolution presuppose social and cultural structures? Or did social roles first emerge on more local levels of collaboration between individuals, thus preceding and maybe even first enabling the development of societal structures, as Tomasello (2019) suggested?

Researchers are always human beings themselves, equipped with only human-specific abilities, interests and views on the world. Therefore, researchers can explore human uniqueness only from within their uniquely human perspective, and thus cannot be independent from their objects of research. From the perspective of today's humans, as we are all socialised in institutionalised cultural structures, it is difficult to imagine an evolutionary human past when such structures had not yet existed. This view cannot simply be stripped off from our thinking because it forms an integral part of our social cognition, knowledge and language as individuals and thus also as scientists (Valsiner, 2012). Given this, theories suggesting that institutionalised structures are essential for the development of human sociality therefore seem only natural. We may not even be able to imagine any alternatives when we consider only what we know about today's humans.

History is full of examples of how preconceived ideas about 'fundamental' differences between 'humans' and 'animals' effectively hindered explorations of other species' behavioural, psychical and social abilities—and thus, also identification of those abilities that are, indeed, uniquely human.

### 1.1 Anthropocentric, ethnocentric and egocentric type I and type II biases

Our inherently species-specific perspective on the world involves various presumptions that are intrinsic to all human individuals and that may entail two types of systematic errors for research (Uher, 2016). *Anthropocentric biases type I* occur when researchers (unintentionally) focus on only those phenomena that they can access easily given their own species-specific abilities, that are human-like (anthropomorphic), or perceived as such in the sense of false positive biases. *Anthropocentric biases type II*, by contrast, occur when researchers ignore those phenomena that they cannot readily perceive or conceive of, that are not human-like or not perceived as such in the sense of false negative biases. Analogous types of *ethnocentric biases* occur when researchers (unintentionally) approach their study phenomena from their own sociocultural position. This is because their gender, culture, nationality, worldview, language, historical time, scientific discipline or school of thought, to name just a few, make them insiders to particular communities and outsiders to others, each exhibiting their own particular biases (Geertz, 1988). Analogously, *egocentric biases* of both types occur when researchers' scientific explorations are (unintentionally) influenced by their own personal standpoints.

These two types of biases occur in all disciplines and can influence research on two levels (Uher, 2016). On the *epistemological level*, they can influence what phenomena researchers consider objects of research, how they conceive of and define these phenomena, and what questions they ask about them. On the *methodological level*, both types of biases can influence the ways (i.e., approaches) in which these questions are being tackled and the techniques (i.e., methods) that researchers therefore use.

For example, preconceptions about human uniqueness, reflected in anthropocentric definitions of study phenomena like 'personality' and 'culture', have long prevented researchers from even considering the idea that individual-specific behaviours (Uher, 2008, 2018b) and

group-specific socially-transmitted behaviours and knowledge (Schuppli & van Schaik, 2019) may occur also in some nonhuman species. Overcoming anthropocentric biases on epistemological levels by elaborating definitions of 'personality' and 'culture' that apply to other species as well opened up possibilities for exploring how these phenomena may have emerged in human evolution as well as their possible precursors, homologues and analogues in other species. But intricate challenges also arise from possible biases on methodological levels, which cannot be solved easily.

### **1.2 Challenges for species comparisons in social cognition research**

Exploring the role that social roles may have played in the evolution of human sociality (Tomasello, 2019) is a challenging endeavour in which anthropocentric, ethnocentric and egocentric biases of both types and on epistemological as well as on methodological levels may co-occur and overlap, making their recognition particularly difficult. Their impact may be even particularly pronounced given that (unlike e.g., morphology) social roles and individuals' pertinent cognitions and knowledge are not publicly observable in themselves but can only be inferred, inevitably with possible errors, from individuals' behaviours and verbalised ideas, the latter being accessible only in humans. Moreover, neither social roles, nor pertinent cognitions and knowledge, nor behavioural or verbal interactions leave any fossilised traces in themselves. They can only be reconstructed indirectly from archaeological findings, making the exploration of their possible evolutionary pathways prone to speculations.

## **2. Comparative psychology: Alternative perspectives and approaches**

Cross-species comparative psychology opens up fundamentally new perspectives and contributes alternative concepts and methods that may help minimise the various kinds of type I and II biases and disentangle pathways in the ontogenetic and (possible) phylogenetic development of human sociality and other features assumed to be uniquely human. It offers illuminative approaches by studying species with different degrees of phylogenetic relatedness to humans; different behavioural, social and ecological systems; and, important for studying sociality, without institutionalised forms of social cooperation. Empirical studies on today's living species can, even if only indirectly, provide some evidence for the likelihood of particular evolutionary pathways, thereby reducing the level of speculation inherent to any evolutionary research.

### **2.1 New insights into the ways in which humans are actually unique**

Systematic comparisons of humans with other animal species opened up fascinating new insights into various forms of social cooperation among individuals and the cognitive and meta-representative abilities underlying them. Such comparisons revealed important qualitative differences in the ways in which human individuals, already during childhood, cooperate and think about others as compared, for example, to individuals of our closest living relatives, the nonhuman great apes, with whom we share a long phylogenetic history. Tomasello's (2019) research highlighted that humans, but not nonhuman primates, *knowingly* take up roles in larger social systems. Similarly, other researchers showed that great apes are cultural but not *knowingly* so (Gruber, Zuberbuehler, Clement, & van Schaik, 2015). These findings identify the meta-cognitive abilities to represent knowledge, especially knowledge about relationships with others, as a determining feature of human's behavioural, psychical and social uniqueness.

## **2.2 Anthropocentric biases on methodological levels**

A further key contribution of comparative psychology, owed to the involvement of nonhuman species, is the use of behavioural methods of data collection. Behavioural methods are essential for valid comparisons because rating methods, dominating in psychological research on humans, fail to meet the meta-conditions of measurement (Uher, 2018a), which renders them prone to all kinds of biases. Comparative studies contrasting observations and measurements of individual behaviours with standardised assessments showed that raters' stereotypical beliefs about human individuals (e.g., related to age, sex) influenced their 'personality' judgments of nonhuman primate individuals. These biases are highly complex and not straightforwardly recognisable, and most likely occur in similar ways in judgements of human individuals as well (Uher & Visalberghi, 2016; Uher, Werner, & Gossett, 2013).

But behavioural methods are not free of anthropocentric pitfalls either. For valid investigations and cross-species comparisons, species specificities must be considered, which may, however, compromise direct comparability in terms of identical operational study designs and procedures. Necessarily, operational designs to study humans often cannot be identical to those needed to study other species, and vice versa. In gaze-following studies, for example, attempts to use the same 10-second gaze cue did not work out for all species (Tomasello, Hare, Lehmann, & Call, 2007) because species differ in how they pay attention to their environments (e.g., orangutans generally do not gaze at others more than two seconds but are still highly vigilant; Rijksen, 1978). Confronting animal individuals with a human experimenter to study their joint attention skills may be needed to establish comparable control conditions in behavioural experiments. However, this setting may be ecologically valid only for domesticated species for which such inter-specific encounters played a crucial role in their evolutionary development—much in contrast to wild species like great apes. This makes it difficult to disentangle actual differences in the species' abilities from differences that are only caused, or at least influenced, by the level of ecological validity that can be established for the given species in a given study design.

This example highlights that comparability cannot be established on the level of operational definition but only on the conceptual level, considering the functions and meanings that particular behaviours and contexts have for the given study population (Uher, 2015). Researchers must carefully consider an inherent trade-off between ecological validity and the comparability of study designs—not only in comparisons of different species but also in comparisons of different sociocultural communities in humans. Awareness of and reflection about the various kinds of biases that can occur on both epistemological and methodological levels are important to tackle these fundamental challenges.

## References

- Geertz, C. (1988). *Works and lives: The anthropologist as author*. Cambridge: Polity Press.
- Gruber, T., Zuberbuehler, K., Clement, F., & van Schaik, C. (2015). Apes have culture but may not know that they do. *Frontiers in Psychology*, 6, 91. <https://doi.org/10.3389/fpsyg.2015.00091>
- Rijksen, H. D. (1978). *A field study on Sumatran orang utans (Pongo pygmaeus abelli Lesson 1827). Ecology, behaviour and conservation*. Wageningen, NL: Veenman and Zonen.
- Schuppli, C., & van Schaik, C. P. (2019). Animal cultures: How we've only seen the tip of the iceberg. *Evolutionary Human Sciences*, 1, e2. <https://doi.org/10.1017/ehs.2019.1>
- Tomasello, M. (2019). The role of roles in uniquely human cognition and sociality. *Journal for the Theory of Social Behaviour*. <https://doi.org/10.1111/jtsb.12223>
- Tomasello, M., Hare, B., Lehmann, H., & Call, J. (2007). Reliance on head versus eyes in the gaze following of great apes and human infants: the cooperative eye hypothesis. *Journal of Human Evolution*, 52(3), 314–320. <https://doi.org/10.1016/j.jhevol.2006.10.001>
- Uher, J. (2008). Comparative personality research: methodological approaches. *European Journal of Personality*, 22(5), 427–455. <https://doi.org/10.1002/per.680>
- Uher, J. (2015). Comparing individuals within and across situations, groups and species: Metatheoretical and methodological foundations demonstrated in primate behaviour. In D. Emmans & A. Laihinen (Eds.), *Comparative Neuropsychology and Brain Imaging (Vol. 2), Series Neuropsychology: An Interdisciplinary Approach*. (chapter 14, pp. 223-284). Berlin: Lit Verlag. ISBN 978-3-643-90653-3 <https://doi.org/10.13140/RG.2.1.3848.8169>
- Uher, J. (2016). What is behaviour? And (when) is language behaviour? A metatheoretical definition. *Journal for the Theory of Social Behaviour*, 46(4), 475–501. <https://doi.org/10.1111/jtsb.12104>
- Uher, J. (2018a). Quantitative data from rating scales: An epistemological and methodological enquiry. *Frontiers in Psychology*, 9, 2599. <https://doi.org/10.3389/fpsyg.2018.02599>
- Uher, J. (2018b). Taxonomic models of individual differences: A guide to transdisciplinary approaches. *Philosophical Transactions of the Royal Society B*, 373(1744). <https://doi.org/10.1098/rstb.2017-0171>
- Uher, J., & Visalberghi, E. (2016). Observations versus assessments of personality: A five-method multi-species study reveals numerous biases in ratings and methodological limitations of standardised assessments. *Journal of Research in Personality*, 61, 61–79. <https://doi.org/10.1016/j.jrp.2016.02.003>
- Uher, J., Werner, C. S., & Gosselt, K. (2013). From observations of individual behaviour to social representations of personality: Developmental pathways, attribution biases, and limitations of questionnaire methods. *Journal of Research in Personality*, 47(5), 647–667. <https://doi.org/10.1016/j.jrp.2013.03.006>
- Valsiner, J. (2012). *A guided science: History of psychology in the mirror of its making*. New Brunswick, NJ: Transaction Publishers.