

01 Target article authors: **Jonathan Phillips, Wesley Buckwalter, Fiery Cushman, Ori Friedman, Alia Martin, John Turri, Laurie Santos, Joshua Knobe**

“Knowledge before belief”

02 Word counts

- *Abstract:* 60
- *Main text:* 999
- *References:* 410
- *Entire text:* 1,608 (all, including headings)

03 Commentary title: **Knowledge is belief – and shaped by culture**

04 Names: **Andrea Bender** **John B. Gatewood**

05 Institutions: University of Bergen
Department of Psychosocial Science
& SFF Centre for Early Sapiens Behaviour (SapienCE)

Lehigh University
Department of Sociology and Anthropology

06 Institutional mailing addresses:

Department of Psychosocial Science
& SFF Centre for Early Sapiens Behaviour (SapienCE)
University of Bergen, P.O. Box 7807, N-5020 Bergen, Norway

Department of Sociology and Anthropology
Lehigh University, 31 Williams Drive, Bethlehem, PA 18015-3169, US

07 Telephone numbers: +47 55 58 90 81 +1 610-758-3814

08 Email addresses: andrea.bender@uib.no jbg1@lehigh.edu

09 Homepage URLs: <https://www.uib.no/en/persons/Andrea.Bender>
<https://socanthro.cas.lehigh.edu/content/john-b-gatewood>

10 **Abstract**

Phillips and colleagues claim that the representation of knowledge is more basic than the representation of belief, presupposing them to be categorically distinct mental states with distinct evolutionary purposes. We argue that the relationship between the two is much more complex, is further shaped by culture and language, and leaves its mark on manifestations of theory of mind and teaching.

11 **Main text**

“Any act of factual knowing presupposes somebody who believes he knows what is being believed to be known. This person is taking a risk in asserting something, at least tacitly, about something believed to be real outside himself.”
(Polanyi, 1958, p. 313)

In asking whether the representation of knowledge is more basic than the representation of belief, Phillips and colleagues presuppose that knowledge and belief are categorically distinct mental states. The authors also claim that what they call knowledge is clearly distinguishable

from perceptual access to information, and that therefore the representation of another's knowledge is more than Level-1 perspective taking. While we remain unconvinced by this second claim, our focus rests on whether *knowledge* and *belief* are indeed categorically distinct.

The first two features put forward as essential for knowledge are that it must be (i) factive and (ii) more than just true belief. In other words, you 'know' something if you believe a truth for the right reasons. For instance, you can say you know that humans landed on the moon in 1969 if it is true and if you, say, watched the live transmission. If, however, you claim it was a spaceship headed for Orion that made an emergency landing on the moon, then your conviction that humans landed on the moon in 1969 would not count as knowledge, but as belief – and, well, rightly so.

We argue that the relationship between knowledge and belief is more complex and subtle. For instance, neither those who 'believe' the 1969 lunar landing was accidental (due to an emergency en route to Orion) nor those who 'know' it was pre-planned and intentional are *knowing* these things. We might know who told us about the moon landing, but we would have no way of knowing whether their account as such is true, and the 'live transmission' some of us saw could have been faked. In fact, most of us cannot even know for sure that Earth is round. While flat-Earth proponents at least have face-evidence to back them up, we others hold our conviction to be true simply because we believe that the people who told us knew. This trust in others' knowledge is our quintessential 'evidence' not only for hard-to-verify facts such as moon landings, but for almost everything we take for granted (Bender & Beller, 2019). The lion's share of our common knowledge is nothing else than belief – often plain, unverified belief – adopted from others, and hence culturally conveyed (Gatewood, 2011). Distributed knowledge and cultural transmission are key mechanisms in the process that makes human cognition unique (Bender 2020a; Tennie et al., 2009), but they come at the price of us having to trust without personal verification that what we believe we know is actually true. On the other hand, cultural consensus on agreed-upon knowledge is never complete, and diminishing consensus is one driving force for the emergence of distinct (sub)cultural truths (Gatewood, 2012).

Largely due to this cultural imprint, knowing and believing are part of a gradient rather than a simple dichotomy, contingent on the degree of uncertainty involved. Importantly, this gradient may be captured linguistically, with numerous languages even reflecting the role of cultural transmission in a much more nuanced way than English and French, the examples considered in the target article. As much as a quarter of the world's languages must qualify stated knowledge through a grammatical category called *evidentiality*. That is, speakers of these languages are obliged to specify, for every sentence they utter, the source of their information (Aikhenvald & Dixon, 2014; Chafe & Nichols, 1986), for instance whether the speaker has gained the information personally or from someone else, through direct observation, by inference, from hearsay, or assuming (Aikhenvald, 2004). Besides disqualifying English and French as sources of evidence for a universal distinction between belief and knowledge, the obligatory marking of evidentiality in many of the world's languages may also have implications for their speakers' willingness to engage in subjective activities (Luhmann, 2011).

Junín Quechua, for instance, contains grammatical markers for indicating the source of information as being direct evidence (having seen it), conjectural, or hearsay. And, while speakers of this language make extensive use of vocabulary for talking about how things appear to be,

mentalist vocabulary is basically absent. In line with this distinct pattern of conversational topics, Junín Quechua children pass tests on representational changes and false beliefs significantly later than they pass tests on appearance-reality distinctions (Vinden, 1996; for more evidence of cross-cultural variability in the onset, unfolding, and pervasiveness of mental-state reasoning, see also Lillard, 1998; Luhrmann, 2011; Mayer & Träuble, 2013, 2015; Robbins & Rumsey, 2008; Träuble et al., 2013).

In other words, cultural conventions and linguistic practices for defining ‘knowledge’ affect the readiness with which people ascribe distinct mental states to other people. This generates substantial variability both in behaviors indicative of theories of mind and in teaching (Bender, 2019, 2020b) and has implications for the authors’ evolutionary account, according to which “the basic capacity for knowledge representation evolved for learning from others”. While we agree that knowledge in the form of Level-1 perspective taking is equally beneficial for human and non-human primates alike, the capacity critical for human teaching and cumulative culture would be Level-2 perspective taking. Even when concerned with facts, efficiency of teaching increases with the ability to diagnose false beliefs in the learner. Unarguably, however, human teaching is even more strongly concerned with conveying beliefs, values, and practices, the high fidelity copying of which serves to strengthen group cohesion (Legare & Nielsen 2015). To restate a claim from the target article more precisely, “we teach others (and expect them to learn) about what we know” – and *especially* about what we believe.

In conclusion, not only is the relationship between knowledge and belief more intricate than purported in the target article (see also Polanyi, 1958), but humans have also evolved to appreciate the subtleties. Indeed, contemporary, fully enculturated humans have developed cultural as well as cognitive means to handle such subtleties with stunning finesse.

12 Conflict of interest and funding statements

Conflicts of interest: none. This work was partly supported by the Research Council of Norway through its Centres of Excellence funding scheme to the SFF *Centre for Early Sapiens Behaviour* (SapienCE), project number 262618.

13 Reference list

- Aikhenvald, A. Y. (2004). *Evidentiality*. Oxford: Oxford University Press.
- Aikhenvald, A. Y., & Dixon, R. M. W. (Eds.) (2014). *The grammar of knowledge: A cross-linguistic typology*. Oxford University Press.
- Bender, A. (2019). The distinct roles of theory of mind and shared intentionality for the emergence of culture. *Current Anthropology*, 60, 182-183.
- Bender, A. (2020a). The role of culture and evolution for human cognition. *Topics in Cognitive Science*, 12, 1403-1420.
- Bender, A. (2020b). What early sapien cognition can teach us: Untangling cultural influences on human cognition across time. *Frontiers in Psychology*, 11:99, 1-6.
- Bender, A., & Beller, S. (2019). The cultural fabric of human causal cognition. *Perspectives on Psychological Science*, 14, 922–940.
- Chafe, W. L., & Nichols, J. (Eds.) (1986). *Evidentiality: The linguistic coding of epistemology*. Ablex Publishing Corporation.
- Gatewood, J. B. (2011). Personal knowledge and collective representations. In D. Kronenfeld, G. Bernardo, V. de Munck, & M. Fischer (Eds.), *A Companion to Cognitive Anthropology* (pp. 102–114). Blackwell.
- Gatewood, J. B. (2012). Cultural models, consensus analysis, and the social organization of knowledge. *Topics in Cognitive Science*, 4(3), 362-371.

- Legare, C. H., & Nielsen, M. (2015). Imitation and innovation: The dual engines of cultural learning. *Trends in Cognitive Sciences, 19*, 688–699.
- Lillard, A. (1998). Ethnopsychologies: Cultural variations in theories of mind. *Psychological Bulletin, 123*, 3-32.
- Luhrmann, T. (2011). Toward an anthropological theory of mind (overview). *Suomen Antropologi: Journal of the Finnish Anthropological Society, 36*, 5–69.
- Mayer, A., & Träuble, B. E. (2013). Synchrony in the onset of mental state understanding across cultures? A study among children in Samoa. *International Journal of Behavioral Development, 37*, 21–28.
- Mayer, A., & Träuble, B. E. (2015). The weird world of cross-cultural false-belief research: A true-and false-belief study among Samoan children based on commands. *Journal of Cognition and Development, 16*, 650-665.
- Polanyi, M. (1958). *Personal Knowledge*. University of Chicago Press.
- Robbins, J., & Rumsey, A. (2008). Introduction: Cultural and linguistic anthropology and the opacity of other minds. *Anthropological Quarterly, 81*, 407–420.
- Tennie, C., Call, J., & Tomasello, M. (2009). Ratcheting up the ratchet: On the evolution of cumulative culture. *Philosophical Transactions of the Royal Society B: Biological Sciences, 364*, 2405-2415.
- Träuble, B., Bender, A., & Konieczny, C. (2013). Human social cognition – the theory of mind research. In J. Wassmann, B. Träuble, & J. Funke (Eds.), *Theory of mind in the Pacific: Reasoning across cultures* (pp. 13-37). Universitätsverlag Winter.
- Vinden, P. G. (1996). Junín Quechua children's understanding of mind. *Child Development, 67*, 1707-1716.