



Sensing magnetism

991



IBI Prize Essay

993

1993; Hamilton O. Smith, Nobel Prize in Physiology or Medicine 1978; Thomas A. Steitz, Nobel Prize in Chemistry 2009; Kurt Wüthrich, Nobel Prize in Chemistry 2002; and Harald zur Hausen, Nobel Prize in Physiology or Medicine 2008.

“Two Heads Are Better” Stands to Reason

IN 2010, BARHAMI *ET AL.* (1) SHOWED THAT, in perceptual decision-making tasks, “two heads are better than one,” provided they communicate with each other: Multiple decision-makers jointly adopt the more confident judgment, which, in ordinary circumstances, tends to be the more accurate. In his Report “When are two heads better than one and why?” (20 April, p. 360), A. Koriat shows that communication among the two heads is not even necessary: Asking for the degree of confidence of the participants and directly adopting the most confident judgment is an even better way of aggregating information. This suggests that the “wisdom of the crowd” could boil down to the ability to identify the crowd’s most confident members and abide by their judgment.

These studies focus on group decisions based on perception or memory. When group decisions are based on reasoning, communication is focused not on individual confidence but on shareable arguments (2). Experimental evidence reveals a number of differences between the two scenarios. In various judgment tasks, the exchange of arguments outperforms bargaining, even though bargaining should enable participants to form estimates of one another’s confidence (3). The exchange of arguments often allows the group to converge on the best answer, even if defended by a minority (4)—something that would not be possible in Koriat’s model, which links confidence and consensus. The group can also reach a collective decision outside—and superior to—the range of individual answers available before the discussion (5, 6). Through group discussion, participants can reach a deep understanding of the task, transferable to new problems (7).

Two heads are better than one not only

in the kind of perceptual or memory tasks analyzed in Barhami *et al.* and Koriat’s studies, but also in solving mathematical or logical problems (4) and in meeting a variety of challenges in science (8), education (9), law (10), and politics (11). In all these cases, the authority of the more confident individuals can be superseded by the quality of the more convincing arguments.

HUGO MERCIER^{1*} AND DAN SPERBER^{2,3}

¹Faculté des Lettres et Sciences Humaines, Cognitive Science Center, University of Neuchâtel, Neuchâtel 2000, Switzerland. ²Department of Cognitive Science and Department of Philosophy, Central European University, 1051 Budapest, Hungary. ³Institut Jean Nicod, Département d’Etudes Cognitives, Ecole Normale Supérieure, 75005 Paris, France.

*To whom correspondence should be addressed. E-mail: hugo.mercier@gmail.com

References

1. B. Bahrami *et al.*, *Science* **329**, 1081 (2010).
2. H. Mercier, D. Sperber, *Behav. Brain Sci.* **34**, 57 (2011).
3. J. A. Minson, V. Liberman, L. Ross, *Pers. Soc. Psychol. Bull.* **37**, 1325 (2011).
4. D. Moshman, M. Geil, *Thinking Reasoning* **4**, 231 (1998).
5. P. R. Laughlin, B. L. Bonner, A. G. Miner, *Org. Behav. Hum. Decision Processes* **88**, 605 (2002).
6. W. Doise, G. Mugny, *The Social Development of the Intellect* (Pergamon Press, Oxford, 1984).
7. M. K. Smith *et al.*, *Science* **323**, 122 (2009).
8. K. Dunbar, in *The Nature of Insight*, R. J. Sternberg, J. E. Davidson, Eds. (1995), pp. 365–395.
9. H. Mercier, *Cognit. Dev.* **26**, 177 (2011).
10. D. J. Devine, L. D. Clayton, B. B. Dunford, R. Seying, J. Pryce, *Psychol. Public Pol. Law* **7**, 622 (2001).
11. H. Mercier, H. Landemore, *Politi. Psychol.* **33**, 243 (2012).