



LETTERS

edited by Jennifer Sills

Taking Experimental Philosophy to the People

ARE THE IMPLICATIONS OF EXPERIMENTAL PHILOSOPHY LIMITED TO RESOLVING PHILOSOPHICAL issues? Are there no practical implications for, say, the legal system, or, even more broadly, how we understand ourselves and others to be responsible (or not) for our actions in daily life?

My greatest hope for philosophy is that it can effect change beyond the academy—that the greatest critical minds can motivate societal reflections and actions in a way that, regrettably, pop culture does not. My greatest reassurance that this is possible, thus far, has been S. Nichols’ Review on experimental philosophy (“Experimental philosophy and the problem of free will,” 18 March, p. 1401). Yet I fear that the promising field of experimental philosophy will unnecessarily limit its scope to dialogue among philosophers. Someone must play Socrates and take philosophy to the people.

Practical applications of philosophical issues abound. For example, knowing that one’s intensity of emotion is proportional to one’s bias of judgment could help when we lose our tempers. Knowing that people think differently about the causality of psychological states than they do about neural firings could inform our approach toward investigating social perceptions of mental illness. If people do not understand how to reconcile determinism and free will, then perhaps we should not challenge inconsistent thinking but instead highlight the paradoxes of causality that exist already within science.

I hope that experimental philosophy will seize the opportunity to make philosophical inquiry matter to a wider audience, in a direct, tangible, and relevant way.

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Experimental Philosophy: Surveys Alone Won’t Fly

THE NEW FIELD OF EXPERIMENTAL PHILOSOPHY, reviewed by S. Nichols (“Experimental philosophy and the problem of free will,” Review, 18 March, p. 1401), is based on the realization that arguments are better served by empirical data than by appeals to intuition. This is a welcome development. Unfortunately, experimental philosophers’ methods, as described in the Review and at the experimental philosophy conference in New York (1), change the problem’s scale rather than resolve it.

Experimental philosophers ask non-philosophers how they would react in a given

scenario. Surveys such as these, however, are an extremely limited research method. They are vulnerable to response biases, phrasing ambiguities, and most important, the well-established fact that people have very little conscious insight into the factors underlying their behavior, and little ability to predict how they will feel or act in novel situations (2).

For these reasons, experimental psychologists collect data by observing behavior in a novel situation, rather than just conducting surveys. Designing successful observation experiments requires rigorous controls for the above-mentioned biases and ambigu-

ities. Experimental psychologists have spent the past century developing ways to do this, and experimental philosophers should take advantage of those insights. Not doing so cannot be justified by calling the enterprise a new discipline.

For experimental philosophy scenarios that are too unrealistic to be constructed in practice, researchers should work to find adequate approximations. Virtual environments may be one solution. Such worlds frequently diverge substantially from reality,

even at the level of basic physics (such as Second Life, in which everyone can fly). Experimental philosophers could harness these environments to create impossible scenarios for actual experiments.

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References

1. Metro Experimental Research Group, Experimental Philosophy Conference, New York, NY, 25 to 26 March 2011 ([www.yale.edu/cogsci/conscxphi.htm](http://www.yale.edu/cogsci/conscxphi.htm)).
2. J. A. Bargh, E. Morsella, *Perspect. Psychol. Sci.* 3, 73 (2008).

Response

AS CARMEL NOTES, SURVEY TECHNIQUES have important limitations as a source of data. However, surveys are the most direct means to investigate ordinary reactions to philosophical issues. When we want to know whether people think that their choices are determined, it is hard to justify not consulting them directly. Experimental philosophers are not alone in using survey techniques; surveys continue to be widely used in many



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Local proliferation

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Do little loans work?

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measurements could be disproved by a future measurement. I wouldn't have expected *Science* magazine, of all places, to say a theory was "proved."

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## Response

Bennett is completely correct. It's an important conceptual point, and we blew it.

COLIN NORMAN

News Editor

## CORRECTIONS AND CLARIFICATIONS

**Policy Forum:** "Toward the second commitment period of the Kyoto Protocol" by A. J. Weaver (13 May, p. 795). The color legend label should read "Emissions ( $\text{kg}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ )."

**Reports:** "Normalization for sparse encoding of odors by a wide-field interneuron," by M. Papadopoulou *et al.* (6 May, p. 721). On Fig. 2D (top right), the last letter of the words "odor" and "stimulation" (that is, r and n, respectively) was cropped. The PDF available online has been corrected.

**Reports:** "Relationship between clinical signs and transmission of an infectious disease and the implications for control" by B. Charleston *et al.* (6 May, p. 726). The third complete sentence on p. 727, which reads, "Additionally, when we used proxy measures of infectiousness the latent period appeared longer than the incubation period [whereas the transmission data suggested it was shorter (Fig. 2, A and 2)]" is incorrect. It should read, "Additionally, when we used proxy measures of infectiousness the incubation period appeared longer than the latent period [whereas the transmission data suggested it was shorter (Fig. 2, A and B)]."

**Reports:** "Selective, nickel-catalyzed hydrogenolysis of aryl ethers" by A. G. Sergeev and J. F. Hartwig (22 April, p. 439). There were two errors introduced during proofs. The third sentence of the first paragraph should read, "In addition, brown coal's polymeric network contains aromatic C-O bonds inherited from lignocellulosic biomass, and the hydrogenolysis of these bonds could facilitate the liquefaction of this carbon source and its conversion to arene feedstocks (6)." The last sentence of the last paragraph should read, "Although these mechanistic issues have yet to be resolved, and turnover numbers of the catalyst must be improved, the results from this work have demonstrated that the selective cleavage of aromatic C-O bonds in the presence of aliphatic C-O bonds can be conducted without reduction of the arene units by using a widely available metal and the cheap, mild, and atom-economical reductant hydrogen."

## Letters to the Editor

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of the social sciences.

Survey techniques are especially important when our interests are in content domains, such as the psychology of moral judgment, the cognitive science of religion, and research on political affiliation. Just as psychologists combine survey results with data from other approaches, such as reaction time and brain imaging, experimental philosophers embrace multiple techniques. We welcome Carmel's suggestion to examine behavior in new situations, but this strategy doesn't obviate the need for survey research.

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## Dealing with Data: Governments Records

IN HIS PERSPECTIVE "ENSURING THE DATA-RICH future of the social sciences" (special section on Dealing with Data, 11 February, p. 719), G. King discusses the potential to transform the future of social science using existing "huge quantities of digital information about people." As King states, the business sector has proven that powerful informatics applied to data about people can support better decision-making and foster innovation.

The same could be done to tackle difficult social problems once we figure out how to assemble and share large data sets while protecting privacy. King suggests building data archives to facilitate reuse of data. Large data archives already exist on survey data (1-5), but little attention has been given to government administrative data, which is a key source of information about our society. From the day we are born until we die, most of our activities leave traces in various government databases. Indeed, these government information systems continuously generate data about all aspects of our society, much like the satellites we use to monitor our physical surroundings.

Unfortunately, most administrative data are left to languish in legacy databases after their original use. We must invest in efforts to build a systematic pipeline to extract data

from these systems for secondary analysis. A well-integrated federated data system of administrative databases updated on an ongoing basis could hold a collective representation of our society. Designed, built, and properly managed by experts under appropriate protocols and oversight, such a data infrastructure could transform the social sciences and still protect individual privacy, just as well-maintained satellite data have transformed astronomy. A secure data infrastructure is critical for government decision support systems, transparency and accountability in government, and ultimately computational social science research. The Census Bureau (5) and others (6, 7) have already demonstrated the enormous potential of federated administrative data systems.

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2. The Dataverse Network Project (<http://thedata.org/home>).
3. NORC Data Enclave ([www.norc.uchicago.edu/DataEnclave/default.htm](http://www.norc.uchicago.edu/DataEnclave/default.htm)).
4. Odum Institute Dataverse Network Project (<http://arc.irss.unc.edu/dvn/>).
5. U.S. Census Bureau Longitudinal Employer Household Dynamics (LEHD) (<http://lehd.did.census.gov/led/>).
6. U.S. Environmental Protection Agency, Central Data Exchange ([www.epa.gov/cdx/index.htm](http://www.epa.gov/cdx/index.htm)).
7. H. C. Kum, D. F. Duncan, C. J. Stewart, *Gov. Inform. Q.* **26**, 295 (2009).

## Science Title Misstep

THE TITLE OF THE 6 MAY NEWS OF THE WEEK story "At long last, Gravity Probe B satellite proves Einstein right" (p. 649) made me cringe. I find myself frequently repeating to students and the public that science doesn't "prove" theories. Scientific measurements can only disprove theories or be consistent with them. Any theory that is consistent with