Debating warnings and solutions 1230

Fisheries protections by port authorities 1235

LETTERS | BOOKS | POLICY FORUM | EDUCATION FORUM | PERSPECTIVES

LETTERS

edited by Jennifer Sills

Scientific Writing, a Case in Point

THE SPECIAL SECTION ON SCIENCE, LANGUAGE, AND LITERACY (23 April, p. 447) addresses the challenge of reading scientific papers. Yet the articles in this section illustrate the very problem they discuss. Consider the long sentences and the number of brackets, parentheses, commas, and dashes in the second paragraph of C. E. Snow's Perspective (p. 450). It is apparent why even scientists only read papers in their own field. Collectively, the sentences in each paper almost need to be diagrammed in order to be understood. I particularly like how P. van den Broek (p. 453) found it necessary to insert two sets of parentheses in the abstract of his paper.

JOANNE O'CONNELL WHITNEY

Department of Clinical Pharmacy, University of California, San Francisco, San Francisco, CA 94101, USA. E-mail: whitneyj@pharmacy.ucsf.edu

Facing the Facts on the Public's Beliefs

IN THE NEWS OF THE WEEK STORY "NSF BOARD draws flak for dropping evolution from *Indicators*" (9 April, p. 150), Y. Bhattacharjee reports that the 2010 edition of *Science and Engineering Indicators* excluded data about the public's dismal response to two completely factual statements about human evolution and the big bang theory because reviewers felt the responses "conflated knowledge and beliefs."

Where is the conflation? The statements to which the survey respondents reacted are correct. One either knows that or does not. Would the NSF Science Board see conflation of knowledge and beliefs if 55% of the public responded incorrectly to the statement "Smallpox is caused by a virus" because those respondents believe the disease is caused by demonic possession? Or would the board see those responses for what they truly represent: an outdated and impoverished understanding of the natural world?

When facts conflict with beliefs, it is the beliefs that must give way. The scientific community should not recoil from strong support of the scientific facts, nor should scientific bodies refrain from sharing data that reveal that much of the public does not understand central facts about the world and the universe in which we live.

JOSEPH D. MCINERNEY[1]* AND MICHAEL J. DOUGHERTY[2]

[1]National Coalition for Health Professional Education in Genetics, Lutherville, MD 21093, USA. [2]American Society of Human Genetics, Bethesda, MD 20814, USA.

*To whom correspondence should be addressed. E-mail: jdmcinerney@nchpeg.org

In Practice, Chimp Memory Study Flawed

IN THE NEWS FOCUS STORY "DID WORKING memory spark creative culture?" (9 April, p. 160), M. Balter reports that "[c]himpanzees are better than humans at some memory tasks," based on work with the chimpanzee Ayumu (*1*). In fact, that study contained a fundamental flaw.

Ayumu received extensive practice on the task; the humans to whom he was compared received none. At least one subsequent study (*2*) shows that, with even very moderate practice, humans can match Ayumu's performance.

In spite of this basic methodological error, the claim of superior spatial working memory in chimpanzees has been widely and uncritically repeated in the popular and scientific media. Propagation of this incorrect idea distracts from more fruitful explorations of chimpanzee memory and undermines ongoing research into human and primate evolution.

PETER COOK* AND MARGARET WILSON

Department of Psychology, University of California–Santa Cruz, Santa Cruz, CA 95064, USA.

*To whom correspondence should be addressed. E-mail: pcook@ucsc.edu

References

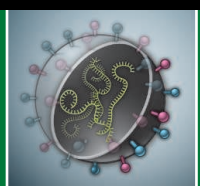
1. S. Inoue, T. Matsuzawa, *Curr. Biol.* **17**, 1004 (2007).
2. A. Silberberg, D. Kearns, *Anim. Cognit.* **12**, 405 (2009).

China and India: Think Outside the Borders

IN THEIR POLICY FORUM "CHINA, INDIA, AND the environment" (19 March, p. 1457), K. S. Bawa and colleagues argue that a bilateral engagement between China and India "will be vital for mitigating biodiversity loss, global warming, and deforestation." Nobody doubts that bilateral cooperation between these two key nations is crucial for resolving such transboundary issues. However, there is considerable doubt as to whether Sino-Indian cooperation is best developed by concentrating on these two nations alone.

China's impact on the environment extends much farther than India's; Beijing's interest in gaining access to Africa's raw materials presents a far more urgent cause for concern (*1*). Therefore, China and India must cooperate beyond the regional level in order to give their efforts a broader, global perspective. For example, if the two join forces with Brazil and Russia—two other nations now rising from underdevelopment—their joint efforts will affect 42% of the world's population. Their plans could encompass environmental

Published by AAAS


Measuring the atmosphere
1241

Drug resistance by flu virus
1243

security strategy as well as cooperation on green technologies and innovation.

Bawa *et al*. proceed from the assumption that the military presence of China and India along their disputed border is damaging the Himalayan ecosystems. However, the authors have overlooked the possibility that, as perverse as it may seem, the fact that the Himalayan region is heavily militarized may actually protect its key habitats and rich biodiversity, because the area is not available for economic exploitation (*2*). The militaries of the two nations have a negligible environmental footprint in the Himalayas. Both countries use special fuel which must be airlifted to the location, and both are careful to cover the tracks of their deployments, for a variety of strategic reasons.

To mix a sensitive territorial dispute with environmental efforts is a recipe for paralysis. At least for the moment, the Himalayas can wait; the world cannot.

KELVIN S.-H. PEH

Department of Zoology, University of Cambridge, Cambridge CB2 3EJ, UK. E-mail: kelvin.peh@gmail.com

References

1. K. S.-H. Peh, J. Eyal, *Energy Pol*. **38**, 4729 (2010).
2. G. E. Machlis, T. Hanson, *BioScience* **58**,729 (2008).

Mental Illness Requires a Multidisciplinary Plan

THE POLICY FORUM BY H. AKIL *ET AL*. ("THE future of psychiatric research: Genomes and neural circuits," 26 March, p. 1580) proposed a research project in psychiatry for combining the study of neural circuits and genomics. We do not oppose the project but believe that it is one-sided and in need of a more comprehensive and integrated view.

Akil *et al*. seem to base their proposal on the premise that genetic factors are necessary, if not sufficient, conditions for the alterations in brain structure and function that are conducive to the development of mental illnesses. These assumptions suggest that genes lead to mental illnesses, whereas environmental factors play only a secondary role as triggers on the pathway from genes to the phenotype.

However, the development of the brain and its regulation by gene expression are determined not only by cellular and neural network factors, but also by environmental factors, such as nursing and maternal care (*1*–*4*). Gene expression and brain organization are linked to environmental factors by bidirectional pathways, and it is the interactions of all three that lead to psychiatric disorders (*5*). The extensive study on adoptive children by Tienari *et al*. demonstrates that gene-environment interaction is significant in the development of schizophrenia spectrum disorders (*6*, *7*). Even psychotherapy has been shown to associate with increase of serotonin-driven brain function (*8*). We call for a more multidisciplinary view than that represented by Akil *et al*. when planning the future of psychiatric research.

PETTER PORTIN,[1]* JOHANNES LEHTONEN,[2] YRJÖ O. ALANEN[3]

[1]Laboratory of Genetics, Department of Biology, University of Turku, FIN-20014 Turku, Finland. [2]Department of Psychiatry, University of Eastern Finland, Kuopio, FIN-70211, Finland, [3]Psychiatry, Institute of Clinical Medicine, University of Turku, Turku, FIN-20014, Finland.

*To whom correspondence should be addressed. E-mail: petter.portin@utu.fi

References

1. M. J. Meaney, M. Szyf, *Trends Neurosci.* **28**, 456 (2005).
2. D. A. Lewis, P. Levitt, *Ann. Rev. Neurosci.* **25**, 409 (2002).
3. J. Lehtonen *et al., J. Pediatr.* **132**, 646 (1998).
4. J. Lehtonen *et al., Psychophysiology* **39**, 73 (2002).
5. Y. O. Alanen, *Psychosis* **1**, 156 (2009).
6. P. Tienari *et al., Am. J. Psychiatry* **160**, 1 (2003).
7. P. Tienari *et al., Brit. J. Psychiatry* **184**, 216 (2004).
8. S. M. Lehto *et al., Prog. Neuropsychopharmacol. Biol. Psychiatry* **32**, 229 (2008).

CORRECTIONS AND CLARIFICATIONS

Reports: "Small RNA duplexes function as mobile silencing signals between plant cells" by P. Dunoyer *et al.* (14 May, p. 912). References 19 to 22 are incorrect in the reference list, although they are cited with the correct numbers in the text. Reference 22 by P. Dunoyer *et al.* should be reference 19, and references 19 to 21 should instead be 20 to 22, respectively.

Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the previous 3 months or issues of general interest. They can be submitted through the Web (www.submit2science.org) or by regular mail (1200 New York Ave., NW, Washington, DC 20005, USA). Letters are not acknowledged upon receipt, nor are authors generally consulted before publication. Whether published in full or in part, letters are subject to editing for clarity and space.

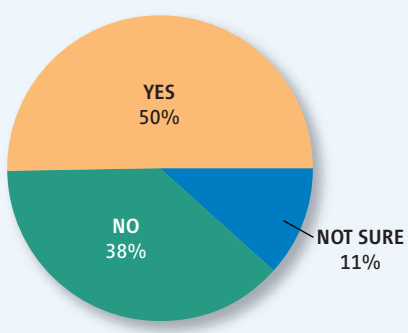
Readers' Poll Results

Unconventional Journals

On 23 April, we asked what you thought about this question:

In general, do the benefits of a journal such as *Medical Hypotheses* outweigh the risks?*

More than 1300 of you responded, from more than 50 countries. Here are the results:



A selection of your thoughts:

"The history of science has shown that the crazy radical idea of a new generation becomes the respected scientific fact of the next. Self censoring of knowledge and ideas has always proved to be a failure."
—commenter David Mayne

"The problem arises when those who are not equipped to analyze some given research just take it for what it is because it is in a journal."
—commenter Peng Liu

*See the poll, and links to the related Letters and News story, at www.sciencemag.org/extra/polls/20100423-1.dtl.

Polling results reflect the votes of those who chose to participate; they do not represent a random sample of the population.

Published by AAAS