are in that rare position where they can do the right thing and profit at the same time. PNAS has thrived from giving our content away after 4 weeks, so it is hard to see why other journals fear giving away their content after 6 months or a year.

Furthermore, the warning by the *Science* editors about the danger of intrusion by big government into scientific publishing is specious. PMC seeks to be just one of many independent hosts of the scientific archive. PMC is a library, not a publisher. If the National Library of Medicine, with its history of support for biomedical research, were to tell PNAS what we could and could not publish, we would withdraw our content. But the argument is symmetric. If HighWire Press were to institute policies that the National Academy found unacceptable, PNAS would also go elsewhere. The risk in either case is small, but surely having content on two or more sites makes one less vulnerable, not more.

Many publishers are still wary of having their content accessed from a central repository. Thus, at the 21 March meeting of the PMC Advisory Board, an additional means of participation was established that provides an easy transition to full involvement. Journals would, after a delay of preferably up to 6 months but no more than a year, send an electronic form of their content to PMC. An archive would be created allowing full-text searching by all, but not access to the articles. The publisher's site would instead remain as the sole source of their articles as long as they remained freely available. Only if public access were withdrawn would the content be released through PMC. Publishers could thereby determine, in an easily reversible fashion, the consequences of giving their content away and of participating in PMC. This scheme does require a clumsy linking back and forth between sites, unlike full participation in PMC, and it would limit the creative evolution of the process. Nonetheless, I suggest that this intermediate level of involvement in PMC be seen as a good faith effort that removes the threat of the boycott, which would then be focused on the scofflaws who refuse public release. The major beneficiary of this compromise proposal is the scientific public, who would have free access to the literature while the principals work out details in the background. The hope is that the often-confrontational tone of the debate thus far would be replaced by a commitment to a reduction in the delay before free release and the full realization of a Public Library of Science.

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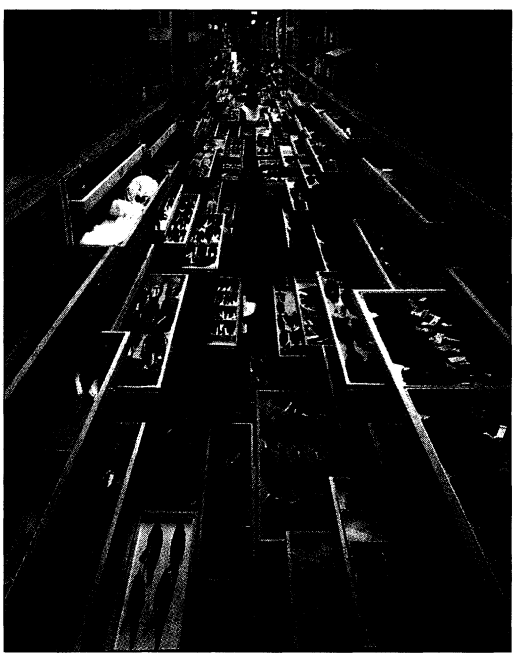
What's in a PhyloCode Name?

THE CONTROVERSY AMONG TAXONOMISTS about naming and classifying organisms is well summarized by Elizabeth Pennisi in her News Focus article "Taxonomy: Linnaeus's last stand?" (23 Mar., p. 2304). The problem to be solved is not complex, as even Carolus Linnaeus noted in the mid-1770s when he originated the binomial system of naming plants and animals. His intent was to separate the name of a taxon from the description of the taxon—the latter ever changing as new organisms were discovered. In other words, he was offering stability. Ironically, this is the same argument now made by the proponents of the PhyloCode system who claim to have Darwin on their side. The debate is not new.



The proposed PhyloCode system would group organisms in clades based on common ancestors, instead of in ranks based on similarity to a type specimen.

Despite the somewhat rancorous controversy that is portrayed by Pennisi, the Smithsonian Institution (home to advocates on both sides of the debate) is opening the channels of communication between the proponents of the Linnaean system and the PhyloCode system. We believe that the challenge to traditional nomenclature by the PhyloCode is long overdue. However, we also believe that the solution resides not in a replacement of the current Code of Botanical Nomenclature, but in a serious overhaul that takes into consideration modern concepts of evolution and phylogeny.

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Searching for the Heart of Human Nature

"ON THE QUESTION OF HUMAN NATURE, WE need a philosophical fresh start that cannot be provided by genomics alone," concludes Alex Mauron in his Essay "Is the genome the secular equivalent of the soul?" (*Science*'s Compass, 2 Feb., p. 831). I agree with his conclusion, but Mauron does not say how this might be accomplished.

I am one of the few remaining Holocaust survivors, a background that may be seen as a reason for my searches into and publishing on fundamental human concepts and issues. What strikes me most about the questions regarding human nature is that the biological discussions as to an individual inception of personal identity appear to concentrate solely on the stages of development of the concerned matter, not on the mind. By "mind" I mean consciousness.

Correspondingly, the question of when the personal identity of an individual begins—that is, when the existence of an embryo or fetus becomes a moral issue—ought to be focused on the emergence of consciousness, of feeling, the affecting of which and of related matters then becomes a human responsibility. The search for an answer to when consciousness commences is not the easiest, but it is much less involved than the futile quest in biology alone for an answer regarding what is a person. The presence of feeling in organisms is not detected in their carefully scrutinized and detailed structure, but in their overall responses to events. Accordingly, it is a mistake to seek a purely physical explanation for the problem of what constitutes human nature.

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Response

I FULLY SHARE PAUL VJECSNER'S SKEPTICISM about narrowly focused biological accounts of human nature. I agree that a "philosophical fresh start" will have to take on board issues of consciousness, subjectivity, and feeling, and that these

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concerns are indeed crucial for such a philosophical effort to make any sense in terms of ethics. In fact, I belong more or less to what European philosophers often call the "pathocentric" tradition, which emphasizes sentience and suffering as the central issue of ethics.

Nevertheless, a critical analysis of "genome-based" speculations is still necessary, because they are so seductive. In the face of intractable controversies about embryo research and abortion, many people feel the temptation to give the last word to arguments based on "hard science," because such a move is rhetorically appealing. After all, even though science is widely challenged and criticized in our postmodern society, it still retains a measure of persuasion and authority long lost by philosophies, religions, or the state. Furthermore, biology is indeed relevant, up to a point. For instance, we must involve biology in our exploration of the concept of person, if we want to disentangle issues of biological individuality on the one hand and personal identity on the other. What the notion of individuality means for human gametes, zygotes, fetuses, and born humans is a question that certainly needs considerable input from biology. But supposing one has sorted out that problem, the questions of what it is to be a person, what it is to have personal rights, and what it is to be "the same person" as some previous stage of human development would still be with us and would mobilize additional philosophical resources.

At the end of the day, we must remember that purely biological accounts of human nature were a part of the ideology that inspired the Holocaust. Ironically, that ideology seemed not particularly concerned with the minutiae of when an embryo becomes a person: its supporters were busy denying—in theory and in practice—human rights to people, that is, to persons in the most ordinary and incontrovertible sense of the word.

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CORRECTIONS AND CLARIFICATIONS

REPORTS: "A sperm cytoskeletal protein that signals oocyte meiotic maturation and ovulation" by M. A. Miller *et al.* (16 Mar., p. 2144). In the second line from the bottom of the caption for Figure 1 (p. 2145), the number "14,1475" should have read "14,147.5."

REPORTS: "X-ray pulses approaching the attosecond frontier" by M. Drescher *et al.* (9 Mar., p. 1923). In Figure 5 (p. 1926), the number "76.0" at the base of the y axis should have read "75.0."

ESSAYS ON SCIENCE AND SOCIETY: "Monkeys in the back garden" by A. Jolly (2 Mar., p. 1705). Due to an editing error, the following citation was dropped from the list of references on page 1705: M. E. Yamomoto, I. T. D. Jarreta, *Int. J. Primatol.* **20**, 281 (1999). The editor apologizes for this mistake.

Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the previous 6 months or issues of general interest. They can be submitted by e-mail (science_letters@aaas.org), the Web (www.letter2science.org), or 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.