

nature biotechnology

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Bioethics and NBAC

To the editor:

The August issue of *Nature Biotechnology* comments on the imminent birth of the National Bioethics Advisory Commission (NBAC) in the United States (14:927). There is no doubt that the need for such an entity in the United States is quite compelling, given the plethora of bioethical-related matters now engaging the country's attention, albeit the near-vacuum of formally constituted entities particularly designed and intended to ponder the vast array of contentious issues appertaining to bioethics. Author Hoyle's commentary rightly focuses readers' attention on the possible disquietude arising from the joining of the NBAC and the American political process. However, some quotes contained in the commentary, which are attributed to Boston University ethicist George Annas, seem to carry a cryptic meaning.

Annas's idea is that, insofar as bioethics is a realm rooted in principle rather than compromise, politics can only "corrupt" it. Thus, the "trick" for an "effective" bioethics panel, according to Annas, is to "influence" policy and politics, albeit without "corrupting" itself by making it appear that ethical principles and practice result from compromise and majority vote.

I would agree that Annas's linkage of compromise and majority vote with the American political process is substantially correct. Traditionally, in America, it has indeed been the case that the political workings of the nation have been consonant with compromises emanating from the vote of the majority. But why would a political process, encompassing compromise and majority vote, act as a corrupting force if applied specifically to the field of bioethics? Since the American way, historically, is to decide matters based on compromise and majority rule, why should things be any different in the context of constructing a body of bioethical principles? The 15-member NBAC board, as explained in the Hoyle commentary, will have manifold concerns and responsibilities, including the identification of "broad principles" to govern the ethical conduct of research. If not through the mechanism of compromise and majority rule, how



will the NBAC go about the task of identifying such principles, or decide other matters within its purview? If the NBAC board adopted the mentality that it does not want others to believe that the principles it carves out and the decisions it makes generally are the result of compromise and majority rule, yet in truth they are, doesn't this represent hypocrisy, which indeed is particularly odious since it would emanate from a body entrusted with

examining ethical issues?

It is important for America to construct a body of principles appertaining to bioethics. But it should be done plainly and unequivocally, in accordance with time-honored pillars upholding the foundation of American society, including whatever compromises may flow from the political rule of the majority. This is simply the American way. To pretend to eschew this tradition, or in fact to attempt to circumvent traditional American political workings because the particular matter involved is bioethical principles and practice is frankly wrong.

Hoyle had the right idea in bringing to readers' attention the potential political ramifications of a US national bioethics commission. However, the remarks attributed to Annas regarding the supposed corrupting influence of politics on ethical principles and practice appear to be wide of the mark.

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Classifying transgenics

To the editor

Since I have devoted considerable effort to the generation of transgenic animals via the sperm cell in the past, and remain interested in research in that area, I was surprised to read in *Nature Biotechnology* (14:942, August 1996) that, ". . . this method has now been used to produce both transgenic cattle and swine."¹ especially since that claim is not found in the original article¹, in which production of transgenic cattle is not reported. In addition, Sperandio is working with M. Lavitrano and C. Spadafora, the investigators that published the original report on sperm-mediated transgenesis in mice², which was refuted³. Even ignoring the controversy surrounding the researchers, the published report¹ includes no data on RNA expression or protein translation, despite the fact that the same group has been working on transgenic pigs using this method since 1989^{4,5}. In my experience,

PCR and Southern blot data are not sufficient to claim success in generating a transgenic animal in 1996.

I trust that this oversight will be brought to the attention of your readers.

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Alan Clarke replies:

In my research news article (*Nature Biotechnology* 14:942, August 1996) on adenovirus-mediated transgenesis, I quoted a paper from Sperandio et al.¹ in support of sperm-mediated transgenesis in domestic species. However, as Yarus argues, this work is incomplete: The cattle data only relates to embryonic work, and no evidence of transgene expression is presented for either species. Although these are serious drawbacks, underlining the problems still associated with this approach, they should not, in my view, cause this work to be discounted out of hand. Sperandio et al.¹ report successful transfer of DNA into embryos of both cattle and swine. In the latter, this is extended to adults. Two issues remain to be resolved: first, reproducibility must be established (the major cause of controversy surrounding the original report in the mouse); and second, appropriate transgene expression must be demonstrated.

How these animals are then classified depends upon definition of the term transgenic. In its broadest sense, this must be determined by the successful introduction of exogenous DNA sequences: Admittedly this may be of no practical use where expression is required, but other endpoints do exist in transgenic studies, such as the use of exogenous sequences to mark lineages. This definition also serves to break the problem down into two components: delivery and expression. If the report by Sperandio et al.¹ can be substantiated by others, then they have achieved the first of these. It remains entirely possible that the second aim will never be achieved using this route.

Clearly, these experiments do not yet fall into Yarus' criteria for transgenesis. However, this report does record the successful addition of DNA using this method, keeping alive the hope that this route will ultimately prove effective in the generation of functional transgenics.

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1. Sperandio, S. et al. 1996. *Anim. Biotechnol.* 7:59-77.
2. Lavitrano, M. et al. 1989. *Cell* 57:717-723.
3. Brinster, R.L. et al. 1989. *Cell* 59:239-241.
4. Gandolfi, F. et al. 1989. *J. Reprod. Fert. Abstr. Ser.* 4:10.
5. Lavitrano, M. et al. 1989. *Cell* 59:241.