Letters

Research Practices

The article by William J. Broad on fraud and the structure of science (News and Comment, 10 Apr., p. 137) and the subsequent letter from Edith D. Neimark (22 May, p. 873) raise moral questions. I would like to mention other, more common practices.

1) Collaborators or supervisors put their names on manuscripts (and thus assume intellectual responsibility for them) reporting research work which they themselves have not done and which they have discussed inadequately or not at all with the workers who carried it out.

2) Research workers do not submit for publication single experiments or series of experiments which do not fit in with their hypotheses.

3) Scientists fail to do relevant crucial experiments which they themselves have identified, or to which their attention has been drawn.

4) Authors deliberately fail to cite other authors whose work predates or contradicts their own.

5) Referees fail to read sufficiently carefully manuscripts of papers, book, or theses, thus missing findings or desiderata which are crucial to the validity of potential publications.

These widespread practices have a considerably greater impact on knowledge than the relatively rare acts of fraud.

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Human Life

Rosenberg is quoted (News and Comment, 22 May, p. 907) as saying, in his testimony at the Senate hearing, that he knows of "no scientific evidence which bears on the question of when actual human life exists." But, leaving aside the question of what the word *actual* means with its theological overtones, Rosenberg would surely agree that the new *biological* human life begins with the activation of the age at fertilization. The fertilized egg is certainly human, since it belongs to no other species than *Homo sapiens*; it is certainly alive, since it can die (as good a definition of life as most!); and it certainly constitutes a uniquely separate human organism, no longer forming any part of its mother's body and already genetically as distinct from both of its parents as it will ever be, right from the start. It is no less a separate organism because at this stage it may not represent one single individual, being still capable of developing into monozygotic twins: if there are problems here, they are theological rather than biological ones, however.

Presumably, what Rosenberg means is that there is no scientific evidence bearing on the question of the existence of the human *person*, as distinct from biological life. Since only a human can have the status of a person, this is not a problem which arises with the development of other animal species. The biological life of a chimpanzee, for instance, starts with the fertilization of the egg, as it does with a human, and it then regularly develops to maturity and death. It is only with humans that there is this further problem as to whether and when the developing organism begins to exist as a person.

In law, a "person" is a being possessed of human rights and, sometimes, duties; and it is for society, influenced by moral and practical considerations, to define a person in this sense in any way it chooses. The simplest solution, and to many the most logical and ethically satisfying one, is to equate the existence of the "person" with the whole of biological life, starting at fertilization: but that isn't the only possibility—which is what the argument over the rights and wrongs of abortion is all about. One could equally well define the status of a human person (though not human biological life, which is a question upon which the scientific evidence *does* have a bearing) in any other way one fancies, dating it from the implantation of the blastocyst perhaps, or from the "quickening," or viability, or birth, or from the acceptance of the infant by its parents or by the rest of the community; or even from the appearance of self-consciousness and rational thought. Nor is there any reason to stop there, since humans who were slaves, or belonging to particular races or religions, have at times been denied their rights as human persons.

However, if defining a living human organism as a person with human rights is to be delayed until some arbitrarily selected time after its biological life has started, this will involve accepting the existence of a class of humans that are *not* to be recognized as human persons, any more than chimpanzees, for example. There may be pragmatic reasons for doing this—to justify procuring abortions, or the nonvoluntary euthanasia of unwanted children, or of the aged and defective—and there certainly are historical precedents for defining and treating particular classes of humans as "unpersons"—rather unhappy precedents, some of them, at that!

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Rosenberg's statement that there is "no scientific evidence which bears on the question of when actual human life exists" is remarkable. It is the sort of claim one would expect to find in a 19th-century journal of theosophy rather than in a publication devoted to studies in the empirical sciences.

It should not be necessary to point out that human life has a physical dimension to it and that to be human is to be (among other things) a physical being. Granted this is true, then the testimony of the physical sciences is certainly relevant to the question of when human life begins. Just how relevant it is should be apparent to anyone familiar with the claims made so often in the past by proponents of abortion that the fetus is "merely a blob of tissue" or "simply part of the mother's body." The facts presented at the Senate hearings were intended to refute those contentions. This use of physical evidence to aid in judging when a human life begins is consistent also with the widely accepted practice of using physical evidence in judging when a human life has ended. If medical testimony is relevant in the latter case, surely it is applicable in the former.

Implicit in the reliance on physical criteria for determining when a human life exists is a recognition of a human being as someone who (i) shows signs of