

to the editor

Lobotomies and intellect

Whether social misfits (adults or children, law-keepers or law-breakers) should be controlled by psychosurgery is an ethical question, much too big for this letter; whether psychosurgery has caused mental decline is a factual question—and one that will inevitably come up again in the present controversy (SN: 3/11/72, p. 174).

In the 1950's, apologists for psychosurgery habitually pointed to the general failure of the psychological testing of that day to distinguish operated from non-operated patients. Usually they implied or asserted that failure to measure a decrement in intellectual performance justified continuing psychosurgery. Some of us were not satisfied and insisted on testing psychosurgical patients with what we thought were more appropriate techniques or research designs. Lo and behold!—the intact sheep suddenly got uniformly higher mean scores than the operated goats. This disturbed the true believers not a whit. I have in my hand a 1970 article reviewing the problem that still cites the unsuccessful psychometry of the 1940's and 1950's and lists not one modern study.

Nevertheless, there is today ample psychometric and experimental evidence of characteristic intellectual decline attributable to psychosurgery.¹

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1. R. de Mille. Intellect after lobotomy in schizophrenia. *Psychological Monographs*, 1962, 76, No. 535.
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- A. Smith & E. F. Kinder. Changes in psychological test performance of brain-operated schizophrenics after 8 years. *Science*, 1959, 129, 149-150.

Evolution and altruism

On the matter of the survival of altruism during evolution (SN: 3/4/72, p. 152), I believe we should note Darwin's group theory. In *The Descent of Man*, he wrote:

"When two tribes of primeval man, living in the same country came into competition, if (other circumstances being equal) the one tribe included a great number of courageous, sympathetic and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would succeed better and conquer the others."

And again:

"Obscure as is the problem of the advance of civilization, we can at least see that the nation which produced, during a lengthened period, the greatest

number of highly intellectual, energetic, brave, patriotic, and benevolent men, would generally prevail over less favored nations."

As to the survival of the altruistic individuals within the group, Darwin's theory is that devoted people propagate their own kind of personalities, not through their physical children, but through their ethical children, those who imitate the actions of the altruistic ones. The disciples that an altruistic person can create, even in a short lifetime, are a much larger number, Darwin says, than the children that a selfish man can father. (References: Charles Darwin, *The Origin of Species* and *The Descent of Man*. The Modern Library. pp. 490, 498-500)

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Congratulations on our 50th

Congratulations on your 50th anniversary of excellent science journalism. You have done a monumental job in bringing those interested in science up-to-date and keeping them there.

Justin M. Miller
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Congratulations on your Golden Anniversary. Thanks also for a very good and thought-provoking editorial. Best wishes for the next half century.

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Volcanoes on Mars

I read with great interest the article "Mariner views a dynamic, volcanic Mars" by Everly Driscoll (SN: 2/12/72, p. 106). It now seems fashionable to consider that volcanic activity on Mars occurred quite frequently. But as recent as the latter 1950's and early 1960's persons who proposed that any volcanic activity on Mars may exist were treated as "oddies" of the astronomical community.

Since Mars has been studied from earth with adequate instrumentation for just over 100 years, it would seem logical to dig into past observational records of this planet, and see if any observed phenomena might be linked with volcanic activity. Such an investigation does indeed produce examples of gray clouds, and bright flares seen at various oppositions.

The majority of these observations were made by amateur astronomers, working with worldwide networks of qualified observers. The lack of the professional stems from the feeling held by many astronomers that solar system studies are boring, and so many took up other topics in astronomy. This left the amateur the keeper of the solar system, a role he has held until recently.

While some professional astronomers might try to disregard the amateur work as in error, one fact prevents him from doing so. When some professionals did study Mars in a serious effort they recorded the same as did the amateurs. One such professional astronomer was E. M. Antoniadi. Using large telescopes at Meu-

don Observatory in France, he frequently observed that the Martian feature Deucalionis Regio had a gray color, which he ascribed to volcanic clouds. His observations are perhaps the first suggestion of volcanism on that planet. This report was made from his papers on the very favorable oppositions of 1909 and 1911. Bright flares were reported on Mars by Japanese observers in the mid-1950's. Other professional works on Mars, namely that of B. Lyot and A. Dollfus, at Pic du Midi Observatory, had found that the light from both the bright and dark regions of Mars was polarized in a way fairly similar to light reflected from terrestrial volcanic ashes.

Thus while many scientists were shocked to find Mars cratered and with volcanoes, a few did see the "writing on the wall." They awaited only the photos of Mariner to give fact to what they already knew.

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Abortion and the courts

I would like to respond to Robert J. Trotter's fine article on "Abortion laws still in ferment" (SN: 1/29/72, p. 75) by saying that I think it behooves the scientific community (physicians, biologists, et al) to come forth with a viable definition of exactly what constitutes a Person whom the 14th Amendment proscribes against depriving "of life, liberty or property without due process of law." Such definition is particularly crucial insofar as the anti-abortion forces rest their case on the assumption that any human homunculus from the moment of conception onward is a "person."

It would seem to me that this involves addressing ourselves to the question of whether a fetus in utero, by virtue of its total dependency on the body of its host-mother, is closer to the status of an *internal organ* than it is to that of a separate and discrete individual.

Perhaps there is a clear-cut biological line of demarcation or threshold in utero beyond which the fetus would be capable of independent survival if born—and this may perhaps provide the much-needed distinction between surgery and murder. In any event, I believe that it is along these lines that a useful definition will one day emerge. Meanwhile I'd hate to think that a decision so vital to the human condition and to the ultimate quality of life on this planet might, by sheer apathy on the part of the scientific community, be left entirely up to the courts.

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Nucleon-photon ratio

In the recent article on antimatter (SN: 2/12/72, p. 103), the ratio of nucleons to photons in the universe calculated from Prof. Omnès' theory should have read "between 10^{-7} and 10^{-11} " instead of between 10^{-4} and 10^{-11} . His ratio thus does accord nicely with the experimentally determined figure of between 10^{-8} and 10^{-9} .

—Ed.