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Homo photosyntheticus

In a recent television commercial for a computer company, a young student stated that she was morally opposed to dissecting a frog in her high school class and suggested that an equally good alternative to such animal experiments was a computer program. At first glance one might scoff at such an approach, but on consideration it raises a number of intriguing issues. Aristotle, many years ago, emphasized deductions about science at the cerebral level, devoid of the unpleasantness of actual experiments. This television advertisement is probably a logical evolution of such thought, and reveals a type of Utopia that is worth pondering.

Frogs are of course one of the more obvious species for application of such a strategy. There are a number of clues about the insides of a frog, such as that it arises from a tadpole, that it causes warts, and that it may turn into a Prince Charming when kissed by a beautiful princess. From such data, a moderately well-trained student should easily be able to deduce what the interior of a frog looks like. On the other hand, there are many other species for which an equivalent amount of information is not available. Those species could be studied at more advanced levels, after students have been exposed to a lot of life by watching daytime television.

Even if the pedagogical problem is solved by computers, there is the annoying problem of getting the Food and Drug Administration approval of new drugs. There seem to be some silly congressional requirements mandating animal testing in order to show whether chemicals are carcinogenic or teratogenic. Replacement of costly and time-consuming animal experiments by computer programs is likely to be greeted with great enthusiasm by industry. If the FDA should take the stodgy position that research is required on animals, the FDA itself could be replaced by appropriate computers, and any computer expert who could not devise a better software program than the U.S. Congress would be fired on the spot.

The computer encroachment need not stop at these simple levels. There are a number of instruments of torture far more inhumane than dissecting an anesthetized frog—for example, the mousetrap and flyswatter. These devices have no redeeming social value, such as advancing teaching or research, but merely represent domination of one species over another. A good software program should eliminate the need for mousetraps and thus prevent the maiming of many mice. In regard to flies the problem is more difficult because flies have few neurons and may not be diverted by a simple algorithm. One could at least enact legislation requiring that flies be anesthetized before they are swatted.

Even if animal experiments have to be done for research, it is questionable whether students should be asked to repeat them. A good clean simulation is superior to a bloody real experiment. Consider, for example, the moral shock of the young student who finds that the stomach of a real frog contains mosquitos, flies, and small grasshoppers. Far from being the beloved and harmless frog that she imagined, she finds a predator actually eating other species with no regard whatsoever for their rights. Letting that frog live condemns many mosquitos, flies, and other insects to their deaths. This moral trauma is inappropriate for an immature student who may then conclude that the world is not nearly as simple as she had imagined. A computer simulation could replace the stomach contents with materials such as potato chips, soda, and other emotionally neutral nutrients. At some point the advanced high school student, however, is going to be concerned by the large number of fish, cows, and pigs that are sacrificed for mere food, and the large number of abandoned dogs and cats killed simply because they are too expensive to keep. People who talk to plants will insist that the biochemistry of animals and plants is so similar that eating plants undoubtedly induces pain at the molecular level.

The obvious answer is to develop genetically engineered human beings who photosynthesize their own food. There might be some minor life-style inconveniences, such as the need to sit under a lamp for several hours on foggy days, but there is little doubt of the moral superiority of this solution. Whether such a human can be engineered from computers alone is a problem, but fortunately there are lots of flotsam and jetsam of society—lawyers, homeless people, and stockbrokers, for instance—who are less likable or less protectable than frogs and can be used experimentally in this good cause. The only moral problem remaining is to prevent insiders from taking their money out of restaurants and investing in sweetened CO₂.—DANIEL E. KOSHLAND, JR.