

# The State of Many Arts

Behind the promise of transplant surgery, involving many organs besides the heart, lies an effort to learn how to live with the newest gifts of surgery and biology.

There is no living man so poor that he has no heart. There is no alcoholic, heroin addict or paraplegic who has no working spleen. And it is said, there is no man without a price.

The black tragedy of a widow holding out for the price of narcotics before releasing the body of her late husband to the service of a transplant surgeon or a medical school may be rare, but it happens.

Such black markets in human organs, real or potential, are admittedly extremes bordering on the fantastic. But the currency of the reports suggests that the success of some human organ transplants, and the promise of others, raise for society and the medical professions ethical and legal questions. And these dwarf the scientific and technical questions still faced on all transplant frontiers.

Kidney transplants, the most common transplants to date, present the fewest such problems, though even willing donation of a kidney forces a physician to violate a basic tenet of his profession: that he do no harm. Removing a kidney, even though the donor has two and consents, does violate that tenet.

This has led surgeons to rely more and more on cadavers as sources, thus posing for the kidney transplant the same problem faced in transplantation of organs like the heart, liver, spleen, pancreas and others which are not redundant in the body.

It is this bind—the necessity of removing organs from a dead, but fresh, body—that raises one of the critical and difficult problems now being considered with greater intensity: What is death, and who should be permitted to determine it?

As has been pointed out in previous issues of *Science News*, there are now no laws in these fields, no official, public regulation of the surgeon and his

art. And there are serious questions about whether there should be.

But if the answers must be moral and voluntary, rather than legal and compulsory, our world may be simply unready for the gifts surgery and biochemistry are combining to offer it.

The development of artificial replacements for human organs, as far along and facing as many technical problems as transplant surgery, is one obvious way around the ethical and legal, if not the scientific and mechanical problems raised by transplants. For internal organs, this tack is currently as bound by its materials problems as are transplants by their rejection problems. But the approach is attractive in that the development of mechanical replacements, can forestall what may well otherwise have to be a moral revolution.

Whether or not the world is ready for them, experimental transplants—and even the most successful are still experimental—will continue to be done. The glamor that surrounds them and the instant reputation assured to any surgeon operating successfully on such a frontier are, unfortunately, as much a lure in some instances as the hope of saving a life through a last-ditch effort is in others.

The possibilities, once the biological problems are solved, appear to be limitless, and conceivably could eliminate the need to deal with the ethical problems; success is its own justification.

Such success, however, is years or even decades off, even by the most optimistic estimates.

The progress, the problems and the issues still to be faced on this complex frontier are explored by the editors of *Science News* in the following state-of-the-art review.