

Ownership and commodifiability of synthetic and natural organs

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Synthetic organs could change the way we regard our own natural organs. Although they would themselves be initially owned by the company that produces them, they would become ours when they were transplanted into the body. Even if they could not be bought and sold on the free market, the fact that they are functionally and materially equivalent to natural organs could lead to an attitude of commodification. Is that a problem?

In the Netherlands and most of the Western world, organ transplants are conducted on a non-commercial basis. Although ethicists and policymakers have extensively discussed the idea of a commercial market for organ transplant, this has remained a theoretical discussion (Taylor 2009). The reasons for this seem to lie in the moral relationship we have to our own bodies. We have some rights over our own bodies that resemble property rights, such as the right to refuse trespass to others and the right of control. However, most people do not interpret these rights as mere property rights, but instead find it morally impermissible to sell oneself into servitude, to prostitute oneself, or to sell their second kidneys as a commodity. Correspondingly, people do not have the right to buy or rent other people or their essential parts.

Synthetic organs are different. From news stories we know that the synthetic hamburger made by researchers at the University of Maastricht cost several hundred thousand euros to make. We may assume that a comparably-sized synthetic kidney made from human cells would cost quite a lot as well. If a synthetic kidney were developed as a commercial product by a company, then it seems that it would be bought and sold as a commodity in a way that “natural” kidneys are not.

Other implantable medical devices such as stents are treated as commodities to some extent, although this is limited by the fact that we treat access to health care as a basic claim right, rather than a fully market-driven liberty right. As individuals, people are not always expected to pay the full market price for their medical care. Still, even when such a right is enjoyed by citizens, companies are allowed to commercialize medical devices and make a profit from them. To this extent, at least, it seems plausible to treat synthetic organs as commodities in the same way that stents and implantable pacemakers are treated as commodities, subject to the limits generally imposed by the health care market.

Synthetic organs challenge some of our ideas about non-commodification of our own bodies. If two objects are functionally equivalent, but the first has been created naturally within my body, and the second is an artifact produced in a laboratory, why should we refuse the idea of treating the one as property, while welcoming this same idea in relation to the second? Suppose that, like the perfect synthetic hamburger and the real one, the two objects were virtually indistinguishable from one another: suppose the artificial kidney were made entirely out of human cells and had perfectly normal innervation and vasculature. Considering this fact, what would the implications of widespread availability of synthetic organs be for the principle of non-commodification that we have towards our own bodies? What issues should we look out for?

We can group the issues that come up along the following lines:

1. Conditions of creation and initial transfer of synthetic organs
2. Subsequent rights of possession of synthetic organs
3. Effects on how we regard natural organs

1. Creation and initial transfer

The best kind of transplant is one in which the transplanted organ is genetically identical to the recipient, or genetically compatible with the recipient to the greatest possible degree. In circumstances where the transplant organ is genetically the recipient's own, it is not readily rejected by his/her body. This is why the first successful kidney transplants were carried out between monozygotic twins. Modern techniques may soon make it possible to create entire organs customized to the genetic signature of the recipient. As soon as this is possible, it will be the most desirable method of creating living synthetic organs and tissues.

The main scenario we should consider, then, is that in which the recipient already has a strong genetic relationship to the transplant organ, and is already a donor of tissue used as a source for the genetic material of the organ.

In thinking about the nature of ownership in this context, a useful starting point is to consider a "natural rights" theory of property. According to such a theory, property rights are created under certain conditions. When a person *mixes his or her labor* with raw materials that s/he finds in nature, s/he thereby comes to own any goods that result, so long as s/he leaves just as many (quality) raw materials for others. Here, when the raw materials are voluntarily donated by the transplant recipient to a biotechnology company, the biotech company mixes their labor with it, applying technology, resources and expertise to the sample to create a complete organ, then it clearly follows that this organ belongs to the company, not to the donor.¹ It seems to follow that others, including the transplant recipient, the insurance company, or the hospital, must acquire the synthetic organ by purchasing or leasing it.

2. Subsequent rights of possession

Once the synthetic organ has been transplanted into the recipient, however, the situation changes. Now, the synthetic organ becomes part of his/her body, contiguous and mixed with the other parts, and is sustained entirely by its new environment. It may no longer make sense to talk about mixing labor with the transplanted organ, but the organ nonetheless becomes completely mixed up in the anatomy and physiology of the recipient. Even if the organ was initially purchased or leased and was owned by somebody outside of the body, at the moment it is transplanted these ownership rights are void. If the recipient gets a head injury, is declared "brain dead" and becomes a potential donor, the transplant organ may not be reclaimed by the earlier owner, whether a biotech company, hospital, or insurance company.

In this respect, a synthetic organ is different from many other kinds of implantable medical device. If an expensive mechanical device owned by a hospital is implanted in a patient, then so long as it can be adequately sterilized for reuse by another patient, it seems quite right that it remains the property of the hospital and returns to them under certain conditions. Note that this does not automatically give the hospital the right to order the device to be taken out of the patient as they like, because this property right is outweighed by other more basic rights such as the right against bodily trespass.

3. Effect on regard for natural organs

Perhaps the most unpredictable effect of the widespread availability of synthetic organs may be on how we regard natural organs. If synthetic organs can be bought and sold, and they are physically identical to natural organs, then it may be hard to justify on principle why natural organs should not also be bought and sold. There are several reasons why this might be relevant even if synthetic organs became a superior technological solution for organ transplants. Natural kidneys might be cheaper than synthetic ones, even if they cannot be personalized to the recipient. It could also be the case that it proves more difficult to synthesize some organs than others.

The availability of personalized organs may also have effects on how we regard our relationship to our organs when they are inside of or attached to us, “belonging to” us. To take a superficial example: the commercial availability of a new, beautiful, genetically personalized nose may make me think of my own nose differently — to see it more critically or feel alienated from it in a way that would not have occurred to me previously. Extensive research has shown a relationship between the availability of cosmetic surgery and psychosocial disorders such as body dysmorphia and changes to self esteem (Imadojemu 2013; Sarwer & Spitzer 2012).. It could be that even among people without a tendency towards such psychosocial disorders, personalized organs could change how we think of our own bodies in a way that is ethically significant.

Conclusion

The arrival of synthetic organs may mean we need to reconsider principles of ownership of such items. One possible ownership criterion is the boundary between the organ’s being outside or inside the body. What is outside of my body, even if it is a natural organ made of my cells, may belong to a company or research institution. Yet when it is placed in me, it belongs to me. In the future, we should also keep an eye on how the availability of synthetic organs may change our attitudes toward our own bodies.

Notes

¹ This natural rights account is due to John Locke (1988 [1689]). A source of complexity for the account, not discussed by Locke himself, is that property rights can be had in relation to particular objects, but also in relation to “intellectual objects” such as techniques of production or specific innovative designs. It is not immediately clear how the story about “labor-mixing” with what is in nature can be applied to the intellectual domain (Moore 2012). Synthetic biology raises intellectual property issues of great legal and commercial importance, not discussed here. Here we will confine our attention to ownership of particular objects: cells, tissues, and organs.

Literature

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