

Biotechnology, Bioethics & Bioart

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IN RECENT YEARS, bioartist and biodesigners have begun to infiltrate scientific laboratories in the name of creative expression and new knowledge. Their number includes some of our best avant-garde artists, whose core currency is the playful and sometimes political exploration of new media through which to create art that will change our way of seeing the world. Yet, there is a great deal more at stake, as I will endeavour to explain.

In the past, the medium of such artists might have been oil paint, water colours, or in more recent years, film, video, or digital technology. Today, their medium is biology – our biology to be more precise, and that of other species. However, their work does not simply derive from our present, post-genomic era; it also foregrounds what comes next. They conduct sociologies of the future, shaping the ideas of science fiction writers, film makers, and the work of scientists. By envisioning new forms of biological transformation and utilization, their ideas become constitutive of our era, in the way that artists before them did.

To this end, we may conclude that bioart and biodesign also scrutinizes contemporary bioethical issues and scientific practice, such as the utilization of embryonic stem cells, or the development of transgenic species. However, it is far from clear that the intention of such artists is to resist such processes. Indeed, some are seeking their development in order to make their art possible, such as Stelarc, the long-standing performance artist who regularly alters his body for his art.

Beginning with live body hook suspensions in the 1970s, Stelarc's most recent enterprise involves creating an ear on his forearm, grown from a cell culture and sculptured over a period of six years. The next stage for this work is the utilization of stem cells to create the precise ridges of the ear that only nature has been capable of perfecting, so far.

If this were not evidence enough of how artists celebrate the transformative aesthetic potential of biotechnology, then consider the subsequent stage of Stelarc's *Extra Ear*. The end goal of the project is to implant an auditory device within the ear and for it to be remotely connected to the Internet, so web browsers can hear what the ear hears creating a distributed auditory system.

Other artists, such as Ionat Zurr & Oron Catts from Australia are scrutinizing the need for us to farm animals, at a time when environmental activists point out the amount of energy needed to sustain one animal life – and indeed, the harmful gases generated by such life forms! As an alternative, they have developed something called *victimless meat*, grown from cell cultures, which has the neat consequence of also attending to animal rights concerns, since there is no sentient life to speak of that is harmed by the consumption of such products.

Of course, biology has been a medium for artists for some time. Everything from saliva to human excrement has entered the play space of artists over the years. The difference in these new works is their experimentation with cutting edge scientific applications, such as stem cells, cosmetic surgery and biotechnology generally – technologies that are at the margins of human experience and about which there is considerable controversy.

The resulting works vary considerably and they range from the weird and wonderful, such as Eduardo Kac's fluorescent, transgenic bunny, to the sublimely curious such as Julia Reodica's designer hymens, a collection of synthetic hymens,

which invite questions into the role of virginity and its loss in the 21st century. Alternatively, Yann Marussich's whole-body secretion of a blue dye in a piece of live art called 'blue remix' heralds a new era of performance. [<http://www.youtube.com/watch?v=pVSPw1XrRK0>].

These artists have varied intentions and, like all good work, their art invites numerous and sometimes contradictory responses. It would be a mistake to suggest that they are pursuing anti-scientific ideologies, since this would radically limit the willingness of scientists to open their doors to such practice. Instead, the emphasis is on collaboration and shared vision, about nurturing new ways of interrogating the end goals of science as the utopian visions of humanity.

However, one can read a deeper politics into such desires. Their gentle tip toeing into labs raises important questions about how we organize society and understand our own humanity. For instance, why do we privilege scientific knowledge over, say, aesthetic, as evidenced by the way in which funding is skewed in favour of the former?

Would we have been better off over the last 100 years or so if we'd spent more of our research funds on the so-called softer sciences? Would we have asked different questions, or sought different solutions to difficult problems? We might have saved fewer lives and, perhaps failed to reduce suffering as effectively as we have through medicine, but then with fewer people on the planet, we might have been more effective at distributing goods more evenly.

The work of these bioartists and designers also raises difficult ethical questions. For instance, it requires us to consider by what codes of ethics such work should be governed? This is often the initial response of critics who find such work disturbing, offensive or potentially illegal: how could one play with transgenic science simply to create a new aesthetic artefact? However, there are good reasons for refraining from such judgements and this is because the aesthetic content of such works is only one way of evaluating their worth.

The more relevant ethical view to take reveals itself when inquiring into some of the challenges that such artists have faced in the pursuit of their work. For instance, in 2004, US bioartist Steve Kurtz was pursued by the FBI under suspicion of bioterrorism, after petri dishes with biological matter inside them were found in his home.

Such artists would want us to see them as acting on our behalf to make science more accountable to a broader public and for their work to engage us more fully on its long term goals and aspirations.

So, the transgenic art of Eduardo Kac asks us to consider the limits of 'Playing God' and he is quick to point out that scientists have already undertaken such experiments, we just don't hear very much about it, or it is cloaked in some remote chance that the experiment will lead to knowledge that will assist humanity in some specific way. In any case, if one wanted to read Kac's fluorescent bunny as the next era of personalised pets, what should be our objection? Doesn't our desire for pets necessarily commit us to their objectification and servitude, even though we might claim they are our companions?

In the end, if we are to experiment with creating new forms of life with synthetic biology, cloning and genetic modification, shouldn't we just admit that it is for little more than our own amusement, whether that is the amusement of our own existence, or that which we find in witnessing great art?