Anna Denejkina
The Body is Obsolete: Stelarc's Radical Experiments with Alternate Human Forms
The Daily Dot, Sunday Magazine The Kernel July 26, 2015

The Body is Obsolete: Stelarc's Radical Experiments with Alternate Human Forms

Since the '70s, transhumanist artist Stelarc has used himself as an experimental canvas for exploring his ideas about the body's obsolescence and its potential for technological alteration. The Perth, Australia-based artist has investigated, amplified, and internally examined his body to view how far it can be pushed with the use of technology, and how much further we can take its operation and its capabilities.

He's created the spiderlike *Exoskeleton*, a six-legged, pneumatically powered walking machine with himself at the center; his *Third Hand* was a mechanical, humanlike prosthesis attached to his right arm and controlled by electrical signals from his muscles. For *Stomach Sculpture*, he swallowed a crablike robot, then used an endoscopic camera to record the results. And he permanently altered his body with *Ear on Arm,* a work in progress that's exactly what it sounds like: a cell-cultivated ear built atop a non-biodegradable scaffold inserted beneath the skin of his arm. He hopes eventually to Internet-enable the ear, so that when it's within any Wi-Fi hot spot, you'll be able to listen to what Stelarc's third ear is hearing.

For Stelarc, the obsolete human body is not one that becomes disembodied. Instead, it is this particular body—the one you're sitting in, with its specific form and its limited functions—that has become inadequate in a technological terrain of fast, precise, and powerful machinery. Via Skype from his office as the Director of the Alternate Anatomies Lab, School of Design and Art (SODA), Curtin University, Perth, he shared his thoughts on art and the body, the increasing speed of technological change, and whether experimenting with his body reminds him of his mortality.

How important it is to see art, and your transhumanist art, as a predictor of the future of the human body?

I've never seen art practice as so much predicting the future, but rather generating contestable futures, contestable possibilities. So, in other words, art isn't a kind of a scientific pursuit of methodological research; rather, it is more interested in that slippage between intention and actuality, incorporating the accidental, the unexpected. For me, art is more about possibilities, not so much about predictions.

Of course, one might argue that there is a problem about speaking of the future as something that is going to happen, and that we can predict it. You can project—using a kind of linear projection, and looking at what is happening now, extrapolating, and considering if the world was going in this direction—what might unfold. But if there is a future, it is certainly something that's unpredictable, and I'm not sure that prediction is a good way of thinking about it.

Having said that, the artist's idea of generating contestable futures—in other words the possibilities that might be examined, possibly appropriated, most often discarded—are possibilities that generate more questions than answers. I think it's good not to think about the future as affirming the human condition, but rather questioning and generating uncertainties about what a body is and how a body operates.

Is the visual aspect of your art an overexaggeration of these possibilities?

Anna Denejkina
The Body is Obsolete: Stelarc's Radical Experiments with Alternate Human Forms
The Daily Dot, Sunday Magazine The Kernel July 26, 2015

Certainly there is a kind of examination of new visual possibilities, which are the result of incorporating new media. [Mathematician and philosopher] Alfred Whitehead once said that "our imaginations are only as interesting as our instruments." That might sound awfully mechanistic, but on the other hand, without, for example, microscopes and telescopes, and fMRI imaging, we would never have any real idea of what those realms of experience might be.

You might imagine, but imagination is not adequate when you're dealing with temporal and spatial structures beyond your normal bodily experience, beyond your five sensory modes of perceiving the world. The images and the unexpected information that instruments and technologies generate, generate new trajectories of exploration. There is no point romanticizing what the body is and what a body can do. A body is a very limited, very vulnerable, not very robust, has a limited longevity, only can see the electromagnetic spectrum in a very defined way—so let's not romanticize the body, but see the body as, in a sense, an inadequate evolutionary architecture that requires additional instrumentation to navigate unexpected temporal and spatial expansions of its operation.

[Philosopher] Marshall McLuhan had a good definition of technology. He said that technology is the external organs of the body. We've evolved as soft evolutionary bodies with internal organs, but now we're developing external instruments, machines, external technological organs that enable us to operate in extended realms of experience.

When you are creating your artwork, and during your research process, does that process make you consider your own mortality?

There is an acceptance, of course, of your physical parameters. Even though one could argue that over the last 5,000 years we might have effectively doubled, or even tripled, ordinary lifespan—which is amazing, it's quite amazing—but 70 or 80 years in good health is still a very, very short time in terms of experiencing the world in an extended spatial and temporal sense.

Seeing the body as a biological organism that is curious about the world—it wants to experience the other, the alien other, it wants to experience spaces and times beyond what it normally inhabits. Of course, it can do so in terms of thinking about cosmology, and because we can detect light from stars that were formed billions of years ago—in a sense we're operating in a time-space environment that is extended already, but we're not going to be able to do this purely as biological creatures.

How do you feel that your human experience has shifted through your artwork, and experiencing your artwork?

I never had a really fixed notion of what it means to be a body, of what it means to be human, so, in a Deleuzian [Gilles Deleuze, philosopher] sense, the body is always becoming—it's incorporating change; it's adjusting its bodily image.

Now, a human body can be a body with a mechanical heart, an artificial limb, augmented cortically with pacemakers. All of these things dramatically alter what we think of the human.

For example, [a few] years ago the first turbine heart was inserted into the chest of a terminally ill patient; he lived long enough for them to test this twin turbine heart. What is interesting about this artificial heart is that it is smaller and more robust and reliable than any previous artificial heart, but it circulates the blood continuously without pulsing. So, in the near future, you might rest your head on your loved one's chest: They're warm to the touch, they're breathing, speaking, certainly alive, but they have no heartbeat. And that one replacement of a biological pulsing heart with a turbine heart, I

think radically interrogates what it means to be human. It immediately erases thousands of years of metaphor of symbolically attributing the heart with all sorts of capabilities, functions, meaning. That intrigues me.

What do you think will be the outcome if we adapt the human body into an online entity, even more so than we are doing now with Wi-Fi-enabled implants and haptic technology, such as a meshing of what we imagine to be a robot and our skin?

That's one contestable future—the kind of Japanese, manga, medical, military model of the body massively augmented by exoskeletons, or even the medical body of implanted prosthetic organs.

Another possibility, though, is quite contrary to that. As technology becomes nanoscaled, all technology of the future might be invisible because it's inside the human body. In 2,000-years' time, the human body might look exactly as it does now, except that it will be populated by nanomachines, nanoscaled sensors—all the technology that we will need will be inside the body rather than externally in our environment.

But, perhaps, bodies and machines are not the future of intelligence at all. Perhaps in the form of viral codes, intelligence might spread within electronic media, within networked systems, and, in this case, the global system of the Internet. It might be more efficient; it might be a more robust kind of intelligence that machines and bodies evaporate into electronic media.

Now, that doesn't mean that intelligence becomes disembodied; in fact, it's just simply differently enabled. If I perform in *Second Life*, that's a virtual space, and my avatar is performing as my surrogate body to maintain that virtual experience; there is a massive system of wiring, computer nodes, satellite systems—all of that is necessary to generate this virtual realm of interactivity. So, one shouldn't be deluded by that notion of being disembodied. This is only a way of speaking about a virtualization that is massively supported by all kinds of technologies and other bodies.

If future generations are fitted with internal technologies, do you think that there may be scenarios that those without this technology will be placed at a disadvantage, or it may become a sort of legal requirement where we have to incorporate this technology into our bodies?

I think the best model for the cyborg is the present body-modification community. Through choice, an individual modifies their body in whatever way that pleases them. Initially, this is more cosmetic, more in the realm of jewelry than in the realm of implantable circuitry—but that is beginning to change.

I don't think it's going to be an issue of social engineering, or a eugenics approach, but rather more like the body-modification community, where you choose what you want to do with your body. Not all bodies will be equally modified or augmented; of course there will be inequities—I might be able to afford something that you can't, or I might be able to access technology that you can't. But this has always been the case.

How far can we take that augmentation and technology?

As artists, we tend not to be in the forefront of the development of new technologies. We are, in a sense, parasitic to technologies that are developed by the medical, military, and corporate institutions that have the money to develop these things. On the other hand, we're good at messing with technology, we're good at hacking technology, and we're good at generating alternate possibilities.

Anna Denejkina
The Body is Obsolete: Stelarc's Radical Experiments with Alternate Human Forms
The Daily Dot, Sunday Magazine The Kernel July 26, 2015

I'm interested in not only augmented bodies, but all kinds of differently enabled bodies; in disabled bodies, in bodies that might perform in totally unexpected and very different ways. I'm very interested in insect bodies and animal bodies—and in trying to biomimic some of these natural, biological structures, you come up with unexpected uses for them.

But there are also other, more worrisome directions. Implanting an 8-bit circuit into the brain of a beetle you can remotely control and mounting a miniature camera on its back—you turn that insect into a surveillance device for the military. Obviously, there are worrisome directions in incorporating technology, and not only using technology on human bodies but on insect and animal bodies.

What about for the human body and the human experience?

We're increasingly becoming portals of Internet experience for people in other places. Imagine if I could see with the eyes of someone who is in London, I can hear with the ears of someone in New York, while someone in Tokyo is remotely accessing and activating my left arm, while I'm completing a task with my own agency—with my right arm. This body would not be a body with a single agency; it would not be simplistically located at this point in time, in this particular space. It would be a body-sensory experience as a result of a multiplicity of bodies elsewhere, and whose physiology might be a split physiology, where someone, somewhere else, can remotely activate half of my body.

Of course there are ethical possibilities, there are malicious agents who might hack this wired-up body, but these are issues that have to be managed.

I think the idea of a body inhabiting one local space, with a single agency that can only map local terrain, which it inhabits, is an outmoded idea of what a body is and how a body should operate. Bodies will become more distributed; more fragmented in their physiological experiences, but at the same time become extended operational systems.

How soon do you think this can potentially happen, that we will cease as a single agency? Will it begin in the next two decades, or will it take longer?

I don't think it's useful to predict in that sense, because there are too many unexpected things that can happen. Sometimes things will happen very, very quickly, and at other times an idea is developed, but the technology to realize and actualize it occurs 50, 60, 100 years later.

What is important is not the ideas in themselves, but actualizing those ideas. Ideas are easy; we can speculate. Actualizing them is what's difficult. These are interesting things to consider, but I don't think they're really important or meaningful things to predict.

Why do you believe some people may be fearful of combining the human body with technology?

Partially because there is this romantic persistence of the biological body as an individual body, as a body with a mind of its own. But that is not only a simplistic way of speaking about a body but is also a convenient way of speaking about a body.

If I was to try to explain all of the causal events that led up to, for example, this interview, [we know] things happened not totally because of my choice, or even because of my control. This body is embedded in a culture, in a history, in a technological medium of the Internet that enables another body to contact it, to be in touch with it. And then, through a curious body, and through a body because of its certain practice, this kind of interrogation unfolds. But, to try to explain this infinite,

causal regression of events that led up to this point, we say "you contacted me and asked for an interview." That's a convenient and simple way of talking about this interaction.

In the end, what is important is not what is in your head, or what is in my head, but what is happening between us in this medium of language that we're communicating in, using this Internet that has become available after many years of research and developments in technology, and which has facilitated, literally, a sort of face-to-face interrogation but one that's collapsed on a screen. I can't do much more than touch the screen; I can project into an imaginary space that you belong to, but the amazing thing is the psychological and spatial distance collapses on this screen that we're communicating on, the screen that has been the result of technological developments.

What are your hopes for the future of the human body?

Because the more and more performances I do, the less and less I think that I have a mind of my own—nor any mind at all in the traditional, metaphysical sense. I try to function with what I would call a posture of indifference. Indifference not in a negative sense, not being non-caring, but rather indifference as opposed to having expectations.

You allow interaction and performance to unfold in its own way, in its own time, and with its own rhythm. In other words, the body should always be open to possibilities. Not to try to be too deterministic, not to be too hopeful, or have too many expectations. [Having] the realization that you function in a complex world of interactivity, with other people, with all kinds of technologies, and that certain things become possible, whilst other things are excluded from your realm of possibilities.

I think ethics and human affect is important; I'm not being purely instrumentalist when I say that. In fact, I think art is more about affect than information; it's more about intuition than information. So what it means to be human, or what it means to be post-human, or what it means to be a robot might still incorporate what we define as emotion, but affect is, or can be seen as, a mode of more sensitive and suitable interaction.

If we're dealing purely with words, purely with mathematics, we're dealing with a certain kind of process that imparts information, but it doesn't impart the subtle meanings that we want to generate with that information. That [meaning] obviously comes about through a combination of hormonal, adrenal, and electrical flows in our bodies that create more subtle sorts of meanings and associations that we want to accompany that information with.

That's what I'm trying to convey—that although this body says it performs with indifference, this is not meant to mean without affect.

During your performances, have you ever felt that you are losing your humanity, that you are becoming a technological object rather than a human being?

No, because I've never made a distinction between bodies and technologies. One might assert that what it means to be human has always been what it means to have made artifacts, to have made some kind of tools, or some kind of instruments. Language can be argued to be a technology.

As hominids, we might have begun with bipedal locomotion, but this bipedal locomotion means two limbs become manipulators. Two limbs are freed from walking and they become manipulators that can fashion clay into pots, that can sharpen chipped stones into scrapers or cutting implements, which can then begin to assemble more complex instrumentation that can polish glass and make it into some

optical instrument that can observe microscopic or telescopic phenomena. So, one can argue that the body has always been a prosthetic body. Simultaneously, one can argue that the body has been a zombie body without truly a mind of its own.

We fear the zombie because it's mindless, because it performs involuntarily; we're anxious about the cyborg because it's a body that becomes increasingly autonomous. But, in fact, we fear what we have always been: We've always been zombies, and we've already become cyborgs.

I don't make that distinction between bodies and technologies, [because] what it means to be human is determined by the trajectory of the technologies that we've developed.

Within your exploration and experimentation with different anatomical architectures, do you think that is the key to really understand the human experience—to see what our bodies can actually do and can feel?

As a performance artist, I am particularly interested in the human body, or in how bodies operate and become aware in the world. Most of these projects and performances are related to those kinds of technical and aesthetic experiences that enable your own body to experience. You engineer an interface, you personally experience it, or perform it, and thereby have something meaningful to speak about later.

I'm not an academic who is citing other people's work; I'm not interested in sci-fi ideas as such. What most artists are interested in is experimenting and exploring the aesthetics of the human condition. But I'm not satisfied in limiting that exploration to this particular body with this form and these functions. I want to know what it's like to perform with a third hand [*Third Hand*], or perform controlling a six-legged walking robot [*Muscle Machine*], or Internet-enabling the ear on my arm (hopefully sometime in the next five years or so).

It's that kind of approach that's taken. But it is an approach that's not deterministic, that is open to opportunity, that incorporates accidents. In fact, I've probably made a career out of being a failure, because none of what I do, nothing that I've done turns out the way it was expected to.

Things go wrong: Sometimes they go wrong in good ways, producing unexpected, new ideas. One idea generates an iteration of related ideas—iteration not in a sense that every new performance is done in a better and better way, but rather that every new performance asks new questions and generates unexpected possibilities.

Is it that dissatisfaction with the human body that is pushing that bonding of the body with technology?

Not so much about the dissatisfaction of the body, but just a realization of its limitations.

There's lots to be said about this particular body, because this particular body is wonderfully complex. It self-repairs, it continues to develop and grow; even though it has a skeleton, its skeleton and its whole musculature and organs grow with it from infant to adolescent to adult. And, of course we have a cortical capacity of 1400 cubic centimeters, and this enables us to be curious, to analyze the world, and our five senses give us an adequate rudimentary picture.

Sure, it takes 50 years to wake up to yourself, and then you quickly deteriorate and die. That's a disadvantage, but the body is a wonderful evolutionary structure. But do we accept the biological status quo? Do we take a kind of Heideggerian [Martin Heidegger, philosopher] acceptance that death

authenticates life? Or, can we redefine the body's existence by prolonging longevity, by making the body more robust and reliable, by augmenting its cortical capacity?

I see no reasons why not to do this.

It's not simply a sci-fi impulse; I think it's an outcome of being a curious artist, or someone curious enough to examine their own body and be curious enough to consider alternate possibilities of bodies with multiple limbs, of bodies with extended senses.

Is enhancement the significant step in keeping the human body contemporary and useful?

I don't like to use the word "enhancement," because that's a value judgment. I refer back to the body-modification community, where people are modifying their bodies the way they choose to, but what is an enhancement for you may not be an enhancement for me.

I don't like to use the word "enhancement," but I do like to use the word "alternate." The idea of alternate anatomies, rather than enhanced anatomies; the idea of alternate capabilities, rather than enhanced capabilities. Yes, we might be able to strengthen our muscle capabilities, we might be able to augment our cortical capacity, but for me what is interesting is to consider this as experimenting in unexpected ways with what a body is.

So, a body is not necessarily going to be in this particular form, with these particular functions, anymore.