

Title: SCRIPT: "CYBERSOULS" PAGE ONE



STELARC

When you see this body wired up in the performance you'll see sensors, electrodes, transducers, computer connections. It's as if we're externalising the human nervous system with a network of technological apparatuses.

NARRATOR (RALPH INESON)

In a small studio theatre in Florence a performance artist called Stelarc is preparing to go on stage. He'll physically wire his body to the web of computers called the Internet. The ebb and flow of data round the world will be converted into bolts of electricity which will make him move involuntarily.

STELARC

You see your body move but you know that you've neither initiated that movement nor are you yourself responsible for contracting your muscle to produce it. So you have this kind of experience of a split body, not a split personality but a split physiology.

NARRATOR

In his dressing room Stelarc attaches electrodes that will connect him to the network through a special interface - a muscle stimulation box. Stelarc's performance called 'ping body' is his latest work exploring the boundaries between people and technology. Outside the theatre evening is closing in and there's anticipation in the air. The audience is looking forward to a spectacle; a bizarre, theatrical display of sound and movement. But there's something deeper. A sense that Stelarc might be predicting the future for all of us.

KEVIN WARWICK

Stelarc's concept that the physical body is perhaps obsolete is really showing us how we can go in the future. Links between humans and machines.

ARTHUR KROKER

The interface that used to be mechanically separated between the technology and your flesh has broken down and we now live in a world of digital flesh and of data flesh.

NARRATOR

A revolution in communication technology is leading us to ask whether we control our technology or whether our technology controls us. Under the control of the Internet Stelarc's plight might perhaps also be our own.

And as our connections with communication technology increase, some scientists and engineers are even beginning to rethink what it is to be human.

KEVIN WARWICK

We're a tool using species and always have been. At the present time our links with computers, with machines are relatively slow. The keyboard and the mouse is a very slow way of communicating from our brain to computer. We look to the future and it seems a natural progression to link much more closely. Even to become one physically.

STELARC

We try to design our instruments so that our body can use them, can adequately toggle or press or manipulate them. I think now we've come to the point where we possibly have to think of redesigning the human body to match the capabilities of its machines.

NEWS FOOTAGE

A silicone chip has been successfully implanted into the arm of a British scientist so that his movements can be remotely tracked by a computer.

NARRATOR

On August the 24th 1998, Professor Kevin Warwick had a set of silicon chips inserted into his flesh. He didn't have a medical need. He just wanted to see what it was like to be wired like a Cyborg directly to his technology.

KEVIN WARWICK

This is a silicon chip transponder. This was surgically implanted in my left arm and for nine days it was part of me, allowing the inside of my body to communicate with a computer. Half of it is a coil, which when it passes through a radio signal produces an electric current and in the other half of the circuit the electric current is used by the silicon chips to send out a unique signal - an identifying signal which when it's picked up by the computer it knows it's me. It knows where I am.

NARRATOR

If we all had similar implants, locked doors would know who we were and keys would become obsolete. And we'd never have a credit card stolen, or forget to carry our passport, or driver's licence. Our bodies would become communication machines. And we'd become something scientists are beginning to call digital flesh.

MECHANICAL VOICE

Hello Professor Warwick.



KEVIN WARWICK

I think the biggest surprise that I had with the experiment was the mental aspect of it. Very much I felt at one with the computer. Signals were going from inside my body! The implant was in me and that made a direct link, so I think it was as though we were friends or something like that. That's me and the computer. Certainly when I came to have the implant taken out I definitely missed the link there. It was definitely as though a friend had died or something like that. When I no longer had that link.

STELARC

The most significant planetary pressure now is not the gravitational pull but the information crush. You know, we're sort of overwhelmed by information that we can't creatively process any more. And we can't subjectively experience.

NITAN SAWHNEY

Nomadic, wake up!

MECHANICAL VOICE

Okay. I am listening.

NARRATOR

But technology always seems to have an answer. In research labs all around the world, new machines are being invented to help us manage information. Linking us ever closer to the digital world. At MIT in Massachusetts researchers have created the nomadic radio - a universal pipe for information. The technology is wearable and hands free, making communication across continents as easy as chatting to a neighbour.

NITAN SAWHNEY

We're already carrying cell phones, pagers, all kinds of devices on our body. And this is just integrating a lot of them. So if you can walk around discreetly and be able to listen to things in your world. Information that you need and be able to access things by controlling it with your voice, that's an interesting world. Where people aren't sort of impeded by technology. They sort of have a very free way of using technology. For example, if I'm home cooking this is a fairly useful device because I don't require - didn't need my hands to use it. I just walk around, make my Punjabi curry and suddenly my mother calls in. She tells me, well you know the recipe you were using requires spinach and not beans. So that's really good because now I can talk to her and take her message and asynchronously send her back a message at some other time.

And say 'thanks a lot Mum, that was really useful!' So now we have a device that lets you do every day things and doesn't make you feel like you have to stop your, you know your task and attend to a message coming in or phone call coming in. Nomadic sleep.

MECHANICAL VOICE

Okay, I've stopped listening to you.

NARRATOR

The nomadic radio is just one step along the road to our digital future. Imagine wearing a whole computer. Being able to read e-mail on the lens of an ordinary pair of glasses.

THAD STARNER

The actual display is in the ear pieces back here. And images routed through the ear piece up to the corner and then sent through the lens to my eye. Allows me to see the computer screen in an unobtrusive manner. As a matter of fact, when it's turned off I see right through it. In the future you'll see much better frames for this. Fashion designer frames. And this little cube that you can see right now will disappear. But it kind of shows how the lab prototypes that you see in the different universities are becoming something you'd wear every day. And we have a display in the eye glasses. We have this keyboard that will soon disappear - not just this sort of form factor - could be woven into your fabric. But also see the computers now start disappearing into a form factor like this, where it's just a credit card that fits in your pocket. Now you can actually buy these things right now. But we're starting to see similar machines that will have long battery life. You stick in your pocket and just use every day and forget about.

NARRATOR

Wearable technology was pioneered in the nineteen eighties by self styled Cyborg Steve Mann. And he has taken it into completely new territory. His wearable computer also connects to a video camera. Turning man's body into a whole communication centre. Linking his eyes to the Internet.

STEVE MANN

Many people nowadays are very positive about technology and in fact it's in some ways excessively positive about technology. We're often told about the great wonders of smart rooms, smart floors, smart furniture, smart toilets, smart elevators, smart light switches. All these things around us that are smart. And what I'm trying to do is suggest something pretty obvious. How about smart people?

NARRATOR

For twenty years Steve Mann has been exploring systems which extend his body into cyberspace. In some experiments Mann has seen the whole world as a video replay from his head mounted camera. Inventing brand new forms of communication.

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(CLIP FROM WIRED FLESH)

For example if I'm at the grocery store, friends and relatives like my wife can look through my glasses and see what I'm looking at and comment remotely on the fruits and vegetables. And sort of annotate things or interact. It's like a first person perspective that they're together with me. So it's like walking side by side and sharing this personal, visual experience.

KEVIN WARWICK

I think the next stage is looking at connecting not just an implant which is sending out an identifying signal. But connecting that implant to the human nervous system. What this means is that in the very short term we should be able to do away with computer keyboards and the computer mouse. That we should be able to directly by thinking about it control and operate a computer.

NARRATOR

But how far do we want to go? And do we have any choice? Social critics Arthur and Marilouise Kroker are concerned. The technologists are presenting a dream in which our bodies fuse into technology. But all the Krokers see is an unreflective urging towards a digital future.

ARTHUR KROKER

You can actually go from country to country, you will find this common class. You pick it out quickly in almost all their speech patterns because they'll all have the patter about tech, you know techno-topian rhetoric, that comes right out of the labs of MIT or Silicon Valley. And it doesn't matter if you're in Malaysia, India, Montreal or in California itself. You'll have exactly the same kind of discourse that goes on. And it's a discourse which is like suffocating, for us really suffocatingly nauseous. Because it doesn't say anything about the consequences, you know possible malefic consequences of the technology. It only says that you know the coming to be a digital reality is this wonderfully utopian future. In its naïveté and its cynicism and its self interest and it's really a nauseous perspective.

ARCHIVE FOOTAGE

NARRATOR

The industrialised world of the nineteen fifties created a dream of total automation.

ARCHIVE FOOTAGE

NARRATOR

The vision transferred from the factory floor into the home promised a new age of convenience and leisure. And as the nineteen fifties tried to look into the future the same dream was portrayed.

ARCHIVE FOOTAGE

NARRATOR

But today the dream has been reshaped. Automation has been replaced by information. We want unbounded memory, connections and the ability to communicate at will. Today's dream promises machines that are intelligent, wired to the network. Machines we can talk to. That we can even ask for advice.

SARAH WOODS

So this is a conventional microwave oven with a colour touch screen integrated into the door. And just like any normal microwave oven you can cook in it. And while I'm cooking I can access the weather. It's an intelligent interactive microwave. Even the biggest technophobe will be able to use it. Not like your desktop computer. They've got users here so you could have a photograph or a name of everybody in the house. And then you go to your picture. It's got a very, very easy interface to it and if you can't use these you can just speak to it to go wherever you want to go. TV! It's the High Street straight into my kitchen which is the heart of most people's homes. Banking! Shopping! It's taking me down the High Street to the shops that I want to shop at. I can set it up and choose where I want to shop. You know, I'm fed up with the same old recipes you know. Suggest something to me and suggest that you know, why not have a barbecue if it's going to be sunny on Saturday. And here's the popcorn.

NARRATOR

For the Krokeros our unquestioning trust in technology signals the beginning of an end to humanity. And poetry is one way of alerting the world to the danger.

MARILOUISE KROKER

Slow down for a fast trip on a slow ride to suicide. Gone through every fashion look in the video book. Punk, rapper, raver, extreme, street. Wore my Tommy, Calvin A-ex, excess ...

NARRATOR

'Slow ride to suicide' seems an over dramatic reflection on the technology we take for granted. But, the Krokeros say, there's no recovery. You only find out what's gone wrong when you've already gone too far.



MARILUISE KROKER

No place to hear, no body to hide. No poetry to sing. It's a slow ride, a slow ride to suicide.

NARRATOR

In 1926 Fritz Lang made a film classic. Metropolis. It became a prototype for a succession of science fiction movies involving Frankenstein creations. Metropolis confronted the promise of industrialisation and technology. Showing a future world where people were made slaves to the machinery of the city. Taking his cue from people working on newly invented production lines, Fritz Lang questioned where the boundaries between human and machine might lie in future. The power of science could even transplant a human into a mechanical robot. Of course it was only fiction... But today the scene creates an uneasy resonance which the creator of Metropolis could never have predicted.

KEVIN WARWICK

Well if we look to a future where humans and machines are physically linked more closely together, sure it does frighten people. They say 'wow, this is science fiction - it's not real science!' I don't think that we should necessarily be too scared. There's a lot of unknown there but an awful lot of advantages and scientifically it all seems to be a possible and even sensible way to go.

NARRATOR

When Kevin Warwick became part technology. Media reporters and television crews from around the world descended on the engineer's Reading laboratory.

ARCHIVE FOOTAGE

NARRATOR

But it was the violation of the flesh that made Kevin Warwick news, as much as his technology. Like Metropolis, the fascination was physical, routed in the body. But our obsession with Frankenstein futures misses the point. The body in our post industrial, digital age is no longer perhaps the most important thing.

JOHN MONK

Who am I? What's my personal identity? I guess this is something people have been concerned about over the ages. And it's led to them forming views about body, mind and soul. And it affects the way they think about themselves and about their relationships with others. And that's all changing because these days of course there's a lot about me that's recorded on computers. And those computer records are used by other people to form opinions about me.

NARRATOR

We don't have to be physically wired like Stelarc, or have an implant like Kevin Warwick. The global network of computers called the Internet touches all our lives. Becoming ever more central to communication, commerce and entertainment. Even when we make a telephone call, or use a credit card we're often unknowing users of the Internet and the world sees us not in terms of our bodies, what we say or what we do. But in terms of information about us recorded on the network.

JOHN MONK

As we use information systems more and more, so more data is collected about us. It can be something quite as simple as a supermarket loyalty card that goes through the swipe reader. This data of course these days can be transported very easily and therefore traded and collected together. And it can form what you might call a digital effigy of ourselves that other people can read and act upon.

NARRATOR

So Kevin Warwick is no more than an extreme example of all of us. With his implant, even his building knew where he was. But outside the laboratory surveillance cameras are being installed across the country. And in our every day movements and transactions we leave a data trail behind us.

JOHN MONK

Any kind of implant seems like a violation of the body. If you like, a violation of me-ness. But that violation of me-ness already takes place because of the data that is collected about us from non invasive technologies. Non invasive technologies that are connected to the global electronic net by all sorts of bureaucracies who are automating their tasks. Medical records, credit cards, mobile phones, phone cards, ticket barriers even are all connected up and collecting data about us and reinforcing our digital effigy held in cyberspace.

NARRATOR

Nineteen Eighty Four is often invoked to describe a nightmare world. But if it's not here yet, it soon might be. We're already tagged! Our actions can be watched and logged as we walk down the street, draw money from a bank, use an answering machine, even watch satellite television.

JOHN MONK

The investment in these systems is huge. These systems that collect data about us and construct our digital biographies and our digital effigies. Our effigies can be transformed and when our effigies are transformed then people can act on us in ways that we don't expect. And people have even been arrested and indeed convicted on the basis of disorganised and faulty records.

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MARILUISE KROKER

At one time people were talked about as users. Users of you know the Internet, users of radio and it changed from user to consumer. And actually a lot of book publishers talk about consumers and not readers of books now. So this is what's - this was really the beginning of the idea of advertising on the Net. Now when you go up into the Web, you very rarely can see the text that you want to see, or the image you want to see without all the banners. There's banners going around every which way. So there really has been a privatisation of the Net to a large extent through the corporations.

ARTHUR KROKER

All of whom just are predatory capitalists. They're in cyberspace to make a quick buck.

NARRATOR

But Steve Mann is fighting back. With his miniature camera wired into his glasses, he's online all the time.

STEVE MANN

Many people have said they're concerns about privacy with respect to this machinery. And I feel though on the other hand it's quite an alternative to this sort of, Orwellian surveillance that we often see and watch. There's cameras everywhere wired into one central authority that watches us all. Instead it's more like we're watching each other and we're connected together as a unit.

NARRATOR

According to Mann, his technology could revolutionise the balance of power in the world. If we all went Cyborg it would be Big Brother himself who'd be under surveillance.

STEVE MANN

When you go to the department store shopping they have cameras pointing at you to record evidence if you might steal or shoplift. At the same time the ordinary citizens may have evidence to record if the shopkeepers are illegally chaining their fire exits shut or doing other activities, human rights' violations. So it may provide a balance and stabilising force in society.

NARRATOR

Steve Mann is now spreading the word. Creating a connected community. A group of wired citizens of the future. Capable of sharing each other's viewpoints and combining their intelligence through technology.

STUDENT

At the moment what we wear is, well fairly shocking to the average citizen. So -

STUDENT

But once you get past those reactions, I mean really that's the biggest, the biggest drawback.

STUDENT

It's almost becoming, eventually I feel it becomes intuitive and it's almost in your blood stream.

STUDENT

But as you can see with the equipment the Professor's wearing today, it's virtually invisible on him and can only get better.

STUDENT

It IS the future. It has to be.

NARRATOR

But technology might have one more track to play. In the future Steve Mann's battle might not be with Big Brother. But with the machines themselves.

KEVIN WARWICK

Communications are critical in terms of power and control. With humans we can see that quite clearly. Those that can communicate effectively and efficiently and those that have the power. We look to the future and machines, technology takes on much more importance. Then communication has no lesser role to play, it's just as important, perhaps even more so. And that's something we have to remember. It's not just a single machine we're looking at. It's a machine that's communicating linked to others. But communication is certainly power.

NARRATOR

Throughout the twentieth century we've been shown a future of robots. Battles with thinking machines. But for once, science fiction has got it wrong. Engineers like Kevin Warwick are convinced that we are on the threshold of machine intelligence. But intelligent machines won't be walking dustbins. They'll be software brains, linked through the network. And the more we link with cyberspace, the more we're meeting the machines on THEIR terms.



KEVIN WARWICK

What we've created over the last century is a really technological world. We've already got to the stage where we can't turn off networks. And as machines are given more power, more intelligence, it could be them that decide to take control. We have to realise this. But in doing so we can turn it to our benefit. We can make positives out of the situation and gain. We can stay in control of the machinery.

INTERVIEWER

Are you sure?

KEVIN WARWICK

No!

NARRATOR

Increasingly decisions will be made by machines. Communicating with other machines and unless we link into their loop they could leave us out altogether. But get too close to machines and we get sucked in. Becoming technology ourselves.

STEVE MANN

It's like an additional sensory organ that I've had running for so long that it, it's - parts of the brain have developed around it and then suddenly when it's shut down it's like sort of riding blindfolded or with ear plugs in. You know? It's like removing some sensory capability that should be there or at least from my own perception should be there.

ARTHUR KROKER

Steve Mann for all that I like him I would say that he's unreflective on the extent to which he has made his body an extension of the technology itself. And he - therefore his experiment on the technology is important not in terms of its technology. But in terms of what it says culturally. When human beings passively and actively, very actively and happily accept being an extension of the technology and shut down any critical consciousness of that.

STELARC

Art is about the construction of contestable futures. Of multiple possibilities that can be experienced, evaluated, discarded, perhaps appropriated and perpetuated in some way. Performance is about actual interfaces, real experiences, taking the physical consequences for your ideas.

JOHN MONK

It's all very well talking about the future of humanity but what I have to do is decide what I'm going to do next. Perhaps all I can do is to be on guard, on guard for the kinds of faults and failures that can take place in technology. And be on guard against its misuse.

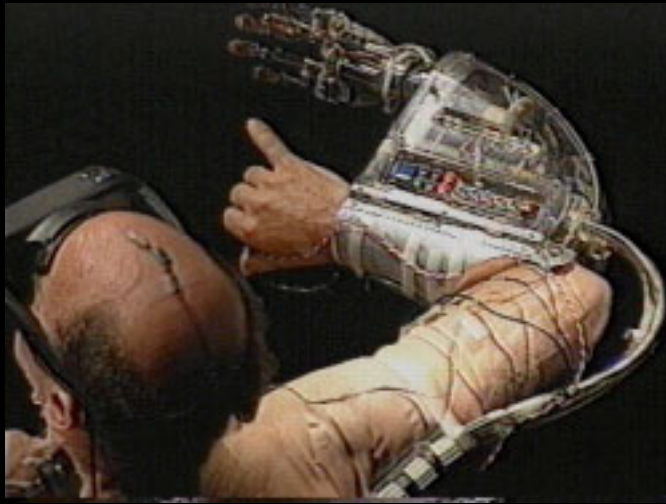
NARRATOR

An artist like Stelarc makes us think about technology. And the way we might be linked to it in future. Food, clothes, music, even conversation are all technologies. But so much a natural part of our lives that we embrace them without thinking. We're sometimes absorbed so deeply that the boundaries between us and our technologies become unclear. But Stelarc forces us to ask whether in fact there are any boundaries to confront at all.

KEVIN WARWICK

I think it becomes very difficult to tell the difference as to what is human and what is machine. Both physically and mentally.

If we're linking together as one which seems a natural way to go, we just have to get used to a different way of looking at things. A different lifestyle. That we're not only part human but also part machine.



PRODUCTION TEAM