When Dress Absorbs Technology–An Interview with Susan Elizabeth Ryan

By Rebecca Louise Breuer and Geert Lovink

Susan Elizabeth Ryan is Professor of Art History, Theory, New Media and Design at the Louisiana State University School of Art. She recently published her study *Garments of Paradise, Wearable Discourse in the Digital Age*. In the introduction of the book Ryan explains that she regards wearable technology as an evolving, ever changing set of ideas, and her interest lies in how technologic advances may enhance the cultural expressions and languages of dress. Whereas a great deal of our lives is increasingly characterised by the virtualisation and dematerialisation part of online communities and communications, Ryan explores the real potential for wearable technology. In other words, she concentrates on fashion and technology as performative acts, which, as such, are embodied and meaningful social practices.

Her first chapter, 'Disparate Histories', charts the relation between dress and technology from a historical perspective (innovations surrounding World War II); in terms of artistic and cultural discourses (from early twentieth century avant-garde theatre to the futuristic fashion designs of the 1960s); and in terms of mass media (science fiction). Ryan emphasizes the fact that military and industrial developments in the field of wearable technology tend to work towards invisibility or unrecognizability of our bodies, whereas she advocates technological advances that make the body, dress and technology culturally visible.

'Wearable Computing', the second chapter of the book, examines the history and development of wearable technology as it occurred in research labs (particularly the MIT Borg Lab of the late 1980s and 1990s). It is here were Ryan locates the beginning of ubiquitous computing[1], futuristic fashion designs (Thierry Mugler) and the technology fashion shows of the early twenty-first century (MIT's 'Seamless', for instance). The creative, conceptual and aesthetically pleasing aspects of wearable technology are lost, and affective and emotional aspects diminished when technology strives for the invisibility, backed by the domination of industry and commerce. In 'The Invisible Interface', Ryan's third chapter, she argues that the invisibility of the interfaces brings about a tendency to de-subjectivize wearers, to erase the body (Philips Bubelle Dress) and develops a predominant focus upon wearable technology as a solution the (physical) problems. The invisibility, in addition, contributes to the problematic aspects of a control society and

states of surveillance, not merely by parents concerned about the whereabouts of their children, but more seriously by governments and people themselves (through the wearing of Google Glass, for instance).

In the following two chapters, 'The Material Interface' and 'The Critical Interface', Ryan develops two perspectives that may champion the problems she addressed in her first three chapters. On a material level wearable technology enables the development of new, creative and meaningful languages that restore fashion's characteristic of embodied speech. Hussein Chalayan's designs, for instance, succeed to bridge different disciplines, create new discourses and awareness, and as such create completely new ways of expression. Another promising potential is found in designers who use wearable technology to criticise ownership of technologies by industrial and commercial parties. Lucy and Jorge Orta's designs are examined, among many others, but also the possible opening up of the field of wearable technology by increasingly available DIY digital craft kits (e.g. Arduino). Ryan concludes her book by emphasizing the persistence of the conflicting ideologies of the industry and commercial practice, on the one hand, and those of the wearing of technology as self-aware and social expressions, on the other. Clearly her hopes rest on the latter.

Informed by a considerable dose of theory (mainly Giorgio Agamben's), Ryan's elaborate study fits into the North-American academic genre of new media scholars—which is also due to a systemic refusal on the side of traditional fashion theory to deal with this topic. *Garments of Paradise* provides students of both fashion schools and computer science programs with an inspiring collection of concepts, examples and possible directions for future actions and designs. After reading, however, our question remained whether the inspiring catalogue of possibilities Ryan suggests will be enough to weather the corporate onslaught. The threshold between the commercial consumer markets of the billions and the creative and critical solutions mentioned by Ryan seems enormous. Time for an email interview with the author.

Geert Lovink: Can we speak of technology as a third skin? If I understand you well, you emphasize the strategy of Making Things Visible. Wearable Technology needs to become explicit and the role of (fashion) design is to enlarge interactive parts. Is this what you like about cyberpunks and people like Steve Mann?[2] Their clumsiness seems to be a conscious act and has become a style: geek aesthetics. It is not a gesture of indifference.

Susan E. Ryan: The phrase 'third skin' is dangerous because the focus on skin alone is reminiscent of the anti-dress desire to be perfect and unencumbered, and the skin is regarded as merely a minimalist membrane for injectable or implantable technologies that support a dream of disembodiment, the uploadable brain, et cetera. But, as you say, we may think of the skin as another 'techno sphere', a matrix of possibilities that can travel with us and intersect with skin or dress. Those two conceptualizations (third skin vs. external matrix/support) have very different implications. My book explores notions, not so much of skin *per se*, as of clothes and dressing as innate human behaviour—how dress has always been a 'technology' of sorts, and it investigates how the interjection of digital technology is (or may be) changing that behaviour, and perhaps us as a species.

I do not use the phrase 'making things visible' since I hope to also emphasize other senses involved in the body's interaction with clothes' materialities. I think of the Chanel runway some years back, where all the clothes were constructed to be very noisy when walked—we are all aware of our clothes' noises (and designers like Tesia Kosmalski make sound the subject of her environmentally interactive Echo coats[3]). Again, touch is one of the most under-discussed phenomena regarding dress. Smell plays a part that is rarely evaluated. So it is more that wearable technology comprises intimate yet outward materialities, multi-layered tissues that exist between people and their contexts. Dress is (or can be) about awareness—being aware of the range of possible interactions, good and bad. Technology today tends to simplify the complexities inherent to dress too much. As you say (below), it tends to disappear; it wants to be 'smart'—but in doing so too often makes us (literally) deaf, dumb, and sometimes even blind.

I like your notion of enlarging interactive parts. Perhaps I harbour a little nostalgia for the days when technology was 'discovered' as tactile and material, as Maggie Orth recalls her early days at MIT, when she helped initiate interest in combining soft materials, hard wiring, and processors.[4] That was a time of wild experimenting, and a similar impulse contributed to the cyberpunk scene. There was less concern about appearing strange or getting it 'wrong'.

GL: My thesis is that the fate of technology is to disappear, to become invisible, aiming to become even more powerful: Tech withdrawing into the realm of the ghost. Wearables defy this tendency, resist it and make us sensible, again, to the technical a priori of the world that surrounds us.

Google Glass makes the power of Google visible. That is precisely its weak point. What do you make of these dialectical movements? And what do you make of the backfire against the 'glassholes'?[5] Is not one of the problems here the failed project of Apple to aestheticize geek culture? After all, the members of Borg Lab have never been accused of being 'glassholes'... Do we need a new underground cyberpunk movement that opposes the Corporate Monopolies?

SR: The notion of disappearing technology has been discussed by numerous authors. It is why I borrowed from Giorgio Agamben the Biblical metaphor of the garments-that-are-not-garments worn by the perfect, and perfectly unaware, inhabitants of Paradise—in other words, to draw attention to our wilful blindness about the dark powers of technology.

When Google Glass was an experiment, I found it intriguing. In other hands it might have continued to develop as a kind of wearable laboratory of ideas. But as it froze into the product we know, it is not so much aestheticized geek culture, as its designers hoped, as it is another Google logo—logo-wear, like handbags with giant designer names, little different from logo-tech (like 'the Apple'). As such, backlash and fandom are both inevitable. But the term 'glassholes', like its vulgar namesake, strikes me as a negative reflection on the speaker as much as it is invective aimed at Glass. Such diatribe only distracts us from the very problems that Glass puts on view: the phenomenology of 'double-vision', living conflicting realities, and the concerns around covert manipulation, surveillance, and tracking.

But you are right; the dialectical momentum is the thing. Event or invention sparking reaction and counter-reaction describe the dynamic nature of how we learn and remain awake amid changing circumstances. The entire corporate-tech culture is built around ubicomp (ubiquitous computing) and smart tech—smoothing things out, making things work 'for you' without you having to think about them. The vision of ubicomp, that technology will fade into the background and 'calm us down' (Mark Weiser's dream from the early 1990s)[6], has become the litany of tech research, and it pervades every area of 'smart tech'. But when does 'calm' verge on comatose?

GL: Do you think that wearable technologies that can be traced remotely, via wireless, have lost their innocence after Snowden? It is one thing to have your sizes measured in 3D, or to wear LEDs, but how about RFID chips that one is not even aware of? Tracking kids and the elderly sounds so reasonable and sensible, thought up by so-called creative do-good people. Should

fashion professionals also discuss this in terms of ethics?

SR: Absolutely. Everything digital has lost its innocence, if it ever truly had any. Wearable Technologies certainly were never innocent and some of the possibilities were understood by the MIT Borgs in the 1980s. But the subject of ethics never came up, except by Steve Mann, who saw the security implications of wearable technology early on. On the other hand, fashion, as an institutionalized practice, seems to make a show to counteract the unethical and unsustainable aspects of its industry—though real gains are tough to assess. Eco fashion has become trendy, but just as fast fashion wrecks havoc among larger, low-end markets. Deeper discussions around how wearables impact our lives are sadly lacking. If more wearable technologies succeed in gaining a bigger share of buzz, more evaluative studies may occur, but fashion professionals may be the last to attend to this. Ironically, the human behaviour most dedicated to the concept of change—fashion—is often frozen into endless revivals fuelled by the goal of ever expanding markets.

Rebecca L. Breuer: Fast fashion retailers indeed dominate the market and cause enormous ecological and ethical problems. People do adopt increasingly homogeneous looks, which has resulted in a Normcore trend. The masses seem uninterested in expressing themselves as being responsible, unique or creative whether through Wearable Technology or otherwise. Yet you emphasize the importance of experimenting with social speech in the final sentences of your book. Should we not – with Brian Massumi – move beyond the social and the human to a more philosophical approach of fashion and technology in order to develop truly new perspectives and possibilities?

SR: We should. And I tried to convey the idea of 'other possibilities' in that same paragraph, and in my citation (throughout the book) of Agamben's 'whatever body' as a processual, even fugitive corporality. 'Social' has become a poisoned word, I admit, but may we grant societies or at least constellations of relations continuously forming and re-forming multiple entities of body, dress, and assorted contexts—assemblages of the living and the nonliving, whereby my coat or shoes have their own bodies, but ones also affected by their relations? In the end, however, how do we get around the historical behaviour whereby dress or garments are understood as items worn on the (human) body?

Whether or not our bodies may be entirely ours all the time, we carry this

bulk around with us in the real world and store its perceptions as memories that leave traces that can change us, or our behaviour. There is a post by John Hopkins on the Empyre email list (July 29, 2014) where he writes, 'Phenomenal events and configurations of these energies pass through the body (as simply another manifestation of . . . flux), leaving altered states of be-ing.[7] These embodied traces persist in time, but as with all life and being, are transitory. They exist as change, and are often experienced as a fundamental awareness of difference—'I originally felt like that, but now I feel like this, having experienced this event''.

Dress proceeds symbiotically with this body in flux. It is in the unique situation of being both of the body (clothes are our original avatars) and not of the body, at once. Dress consists of materials and substances with their own possibilities, including technological, digital, electronic, magnetic, biological—endless possibilities. And by extension, technologically active garments that connect dressing with the potentials of virtual activity are powerful amplifiers of our new predicament of parsing multiple realities.

And to just comment on Normcore—it looks to be just another trend, a very urban one, and, depending on its specific context, it is nuanced and focused on particular status objects and symbolic aggregations just like any other trend. In New York, it is a sophisticated anti-fashion fashion. In the American South, where I live, 'normal' is always the dominant style of dress—it has been much the same for decades, and it is differently nuanced. By contrast, maybe Normcore's appearance now is also by-product, in the real world, of people expressing themselves excessively but anonymously in the virtual world of social media.

RB: In my research I proclaim that fashion technology should, at least partly, evolve around the perceptions or senses a garment may possibly posses autonomous from the languages, intentions and meanings of its wearer. In my writing I refer to the idea of a horse-like jumper that sheds its hair in spring and grows thick in autumn, a design Bradley Quinn once spoke about, or Sonja Bäumel's bacteria textiles, for instance. What do you make of the idea that not the wearer and his or her body, emotions and subjectivity but the garment itself could open up new perspectives upon fashion, perception, technology and communication?

SR: To some extent, that is the point of Joey Berzowska's Skorpions project, in which the dresses activate (move, seams open, linings emerge) independently of the wearer. The idea of autonomous intentionality on the

part of 'intelligent' clothes is a sub theme of Berzowska's work.[8] As I argue in my book, that is one very key area to which critical wearables designers can help bring attention and open discussion. We imagine we are in control perhaps nowhere as much as in our habits of dress. Some of us cling to this illusion of control. Likewise, we imagine we control our technologies, in reality we do not, of course, and we have much to learn about the media and materials around us that maintain their own autonomies. Critical wearable technology has an opportunity here. The problem is, despite the work of designers like Berzowska and others you mention, and ones discussed in my book, their research needs to gain far greater visibility and critical mass. And this is difficult considering they work outside the gated communities of fashion, technology, and academia (certainly so in the U.S.).

It is interesting too to consider 'language' as a wider idea that might include, as you say, the 'perceptions or senses a garment may possibly possess autonomous from the languages (…) of its wearer'. In Gilles Deleuze and Félix Guattari's 'Postulates of Linguistics' (*A Thousand Plateaus)* they point out that languages cannot be pinned down and do not exist in isolation.[9] They describe variations of bodies and of utterances, working toward a broader and more powerful conception of 'language'—language beyond the human. In other words, our ideas about language—and who or what speaks—need to be revised.

RB: Should we not, at least in academic thought, make use of the possibility to *think* beyond the historical perspectives of fashion as essentially human and linguistic categories and habits in order to enable fashion to make its next leap?

SR: I still believe (in line with that old quote from Santayana, about those who cannot remember the past being doomed to repeat it) that being aware of where we have been provides crucial information useful to consider in moving forward. Technophiles are always wiping the board clean, aiming for totalizing change. But change proceeds in increments. We are leaving behind the notion of the human-centred universe—the process is already underway. But in dress above all, knowledge of what things have meant enable us to break those chains to the past in ways that, well, mean something. So, are the creators and designers now moribund, because of 'linguistic categories'? I don't think so. If anything, political and economic (corporate) factors stand in the way of experimentalisation.

RB: Insofar I know none of this year's fashion design graduates in the

Netherlands experimented with the use of wearable technology in their collection. The main interest involving technology at the Amsterdam Fashion Institute seems to be 3-D scanning and Lectra pattern making. Anouk Wipprecht states that students should be encouraged to experiment with technology during their education, but students themselves show little interest. Which new ways of thinking and theorising do you think could change this, and how would theory bring about these changes?

SR: In any field, but in my experience in the classroom teaching the history of art and design to student practitioners (or, hopefuls) in particular, theory and history, both and together, help map a terrain. They provide a kind of cartography of the possible (and impossible), and students generally lack knowledge of the 'bigger picture' of possibilities, while they tend to know more minute aspects of their profession with great subtlety, and with a strong sense of practicality—i.e., they know what they believe they need to, to become successful. And I think it important to teach theory, history, and practice together, so that students are forced to consider difference and confront choices, and not constrain themselves to doxa.

I noted the same phenomenon in my book, referring to V2_'s 2012 symposium involving fashion design students from Enschede and San Francisco.[10] In short, students being trained in clothing design in academic programs have little interest lately in experimental possibilities offered by technology. I am not sure this can be drummed into students in the academic setting, though I have had some limited success, not with fashion students, but in my course mentioned above. Design students in my class, who were canvassed, at least came to believe they could see a larger field of possibilities with more confidence, once they comprehended the nature and ramifications of giant leaps designers had made in the past.

I'm not sure how it is in the Netherlands, but in the U.S. established academic institutions as a rule do not encourage students to take risks or break out into unknown territory. But that territory will become harder and harder to ignore as time goes by.

Perhaps advances in fashionable technology must be introduced from the outside. Or, perhaps young designers like Ying Gao (Geneva/Montreal), who keeps her fashion line and her technological practice separate, will become more numerous and eventually change the landscape—that is, if we remain in the future a species that practices dress (I'm referring to the perennial threat of the 'no dress, only skin' futurists—Marshall McLuhan was one). But

there are numerous designers worldwide who still incorporate technology into dress (as opposed to merely devices) in imaginative ways. I can think of recent postings to the blog www.fashioningtech.com, for example, about Kobakant's Crying Dress that combines dress, textile, technology, and narrative. Or the entries in the Extreme Wearables Designathon that was held spring 2014 by the Art Center College of Design in Pasadena. I suspect that expressive and critical uses of wearable tech will be around for a while.

RB: Does 'being around' – whether to stay or not – suffice, and is it, or can it become, powerful enough to counteract wearable technology as a problem-solver or means of surveillance? In other words, what is needed to make critical wearable tech more than a marginal aspect of fashion?

SR: Perhaps failures of the technologies like the Glass, or disenchantment with surveillance, as time goes by, will open more opportunities for critique. Or increasing user knowledge of digital devices and availability of more user-friendly and evolved types of microprocessors. Not everyone makes their clothes, just as not everyone creates their own phone apps. But some do. Will this become more widespread or just another commercial trend? Who knows. But I take comfort in the tenacity and steady growth in numbers of practitioners of critical wearable technology around the world. For now, I expect we are experiencing a dry patch, a time when very little change is happening on any front that is not directed by corporate interests. It is part of a bigger picture.

RB: In addition, what will be lost if fashion schools remain gated communities and keep their eyes closed for the creative and critical potential of Wearable Technology? Do you regard it a problem that fashion is increasingly adopted and created by technologists?

SR: Again, with fashion today, so much is up to corporate interests, more so than in the past, and those interests are dominating the academies in many places. It is true of both fashion and technology in the academies. But aside from that, I think new ideas come from everywhere, and they always impact dress. If we look at the incredible change in forms, materials, and metaphors created in dress during the 1960s, much of it was energised by events in science and technology. The idea of throwaway clothes made of inexpensive fabrics like paper was a huge fad in that decade that expressed the ideas of cheap design and the toppling of couture. It was a counter-cultural attack on received dictates of dress. But the monstrous offspring of that idea is today's entirely industrial phenomenon of throwaway fashion.

Firms like Patagonia want to bring back the idea of keeping clothes and mending and patching them, providing patching kits. Reusing and modifying recycled thrift store clothing was a popular idea in the 1990s. Recycling the refuse of wearables via electronic ornament or added movement or environmental sensing—these things could come about, but I don't think these kinds of possibilities will spring from academies. But I could be wrong.

GL: How would you respond to the thesis that the wearable technologies you deal with in your book will ultimately disappear and be integrated in the production procedures? Would this be a pity? Ultimately, technology will just be a given and no longer a statement. In this viewpoint fashion can and will be technologized, but in the end remains confined with the boundaries of identity politics and subjected to the agenda of Silicon Valley, which aims for invisible global supremacy.

SR: Dress itself is, and has always been, technology, since the earliest eras—weaving cloth to cover our bodies and support markings with individual and group meanings was a technological advancement. Dress absorbs technology as it evolves. What you suggest will ultimately happen—is happening. The scene you describe with the disappearance of technology—ubicomp's dream—is still the determining paradigm across the technology industry. The related notion that critical and artistic tech designers provide R & D for industry (a scenario identified decades ago by Simon Penny) is horrific. So many young designers today more often seek to leverage their own companies, ultimately to be bought out, so they have bought in from the start. Still, not everyone subscribes, and critique remains a viable practice for the small (yes, small, but important) counter-culture of wearable technology, its critical design wing that practices most closely to art.

Another question one might ask is what impact does accelerating virtualization (enabled by certain kinds of technologies) have on our relationships with material realities? The French group Normals have designed virtual fashion, visible only through technology. This, like the fascination with dressing avatars in Second Life a decade ago, suggests a different threat to the material realities of bodies, dresses, and the physical world. Perhaps the technology question for us today amounts to the face-off between materiality/materialities (taking place in philosophy, literature, and the arts, understood by critical wearable technology practitioners) and virtuality (the domain of mainstream technology and commerce).

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Susan Ryan, *Garments of Paradise, Wearable Discourse in the Digital Age*, MIT Press, Cambridge Ma. 2014. URL: http://mitpress.mit.edu/books/garments-paradise.

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[1] See note 6.

[2] Steve Mann was a member of the Borg Lab at MIT during the late 1990s.

[3] Tesia Kosmalski is one of the designers mentioned in 'The Material Interface' and works with material and haptic interfaces that are visible rather than invisible.

[4] Magie Orth was, like Steve Mann, a member of the MIT Borg Lab.

[5] The term 'glassholes' refers to the attitude and lack of interest in the surroundings someone wearing a Google Glass displays.

[6] Mark D. Weiser was chief technologist at the Xerox Palo Alto Research Center (PARC) and coined the term 'ubiquitous computing' in 1988. In a 1991 article Weiser explains ubiquitous computing as a computational experience not framed by the desktop computer, but rather, as we experience today 'machines that fit the human environment, instead of forcing humans to enters theirs' (Marc Weiser 'The Computer in the 21st Century', *Scientific American,* September 1991, p. 100).

[7] John Hopkins is an artist and educator and owner of the blog tech-no-mad.net

[8] Joanna Berzowska is one of the researchers mentioned in 'The Material Interface' and 'The Critical Interface'. She was a member of MIT Media Lab during the 1990s. In 2007 she collaborated with fashion designer Di Mainstone on Skorpions, 'five electronic garments made of nitinol (a shape memory alloy, or SMA) circuitry and various other materials' (Ryan 2014: 159).

[9] Deleuze, Gilles and Félix Guattari (1987) *A Thousand Plateaus: Capitalism and Schizophrenia.* Translated by Brian Massumi. London and New York: Continuum. French ed.: *Mille Plateaux. Capitalisme et schizophrénie II.* Paris: Les Editions de Minuit, 1980.

[10] V2_ is an interdisciplinary institute for art and technology based in Rotterdam (the Netherlands).