Volume

Archis 2011 #2
Per issue € 19.50 (NL, B, D, E, P)
Volume is a project by Archis + AMO + C-LAB…

9 789077 966280

INTERNET OF THINGS

With Trust Design #2 and Tracing Concepts

Touching the Interspace

Carola Moujan

The interface is defining for our orientation in the world. Touch seems the natural way to go, but how does it influence our own notion of being? Carola Moujan suggests that 'interspace' is the new realm for designers.

The word touch is on everyone's lips these days. It generally refers to tangible devices and interfaces, a trend that possibly started with Steven Spielberg's 2002 movie *Minority Report*, and of which the iPhone is the seminal example. The spectacular commercial success of Apple's smartphone proved to the world that there is something in touch that significantly reduces the gap between humans and computers, and indeed interacting with objects through direct contact undoubtedly increases user pleasure. Some critics, however, such as Don Norman, have been pointing out the inefficiency of tactile interaction, going as far as calling tangible devices 'as step backwards in usability'. Norman believes 'natural interfaces are not natural', that they trigger random and unwanted actions, do not rely on consistent interaction protocols, present scalability problems, etc.. He argues that a clear protocol should be adopted to make them fully functional, just as happened with visual interfaces.

Norman's essays bring a critical perspective into the current tactile craze. This raises a question however: if tangible devices are unreliable and inconsistent, unpredictable, and overall less efficient than previous systems why are people willing to pay (much) more and learn how to use them – no matter how intuitive they might be? What is it that makes them so pleasurable to use? And, importantly, would they *remain* as pleasurable if they were more functional?

The pitfall in Norman's argument is that he puts visual and tactile interfaces on the same level. In other words, he implies that a tactile interface should work just as a visual one does; and it is true that in most tangible interfaces as they exist today, the role of touch is restricted to the hand only, and envisioned merely from a functional perspective – i.e. as a replacement for pointers and mouses in command execution. This is a mechanical understanding that overrides the most powerful affordances of haptics which, I argue below, are not connected to function, but to experience.

The Bipolar Nature of Touch

Most of the time while discussing touch one thinks of the hand and its ability to grasp things. This, however, is a very narrow view of what this sense really is. The experience of touch concerns the whole body as skin sensations of temperature and humidity, pressure from internal organs, or experiences of movement and weight also belong to it. James J. Gibson calls this global understanding of touch a *haptic system*, describing it as a bipolar device through which an individual simultaneously gathers information about the surrounding environment and about their own body.

The dual nature of touch has interested thinkers from different disciplines throughout history. Philosophers such as Husserl, for instance, have pointed out that touch is where the limit between 'what is me' and 'what is not me' lies, for it is through touch that *a* body

becomes *my* body – in other words, it is the localization, through touch, of sensations as such, that makes us aware of having a body of our own. On the other hand, Aristotle – who gave touch a lot of thought – noted that, unlike the other senses the experience of touch is fusional: touch does not distinguish between 'a touching subject' and 'a touched object', both actors playing both roles simultaneously.

Closer to us in time, Australian filmmaker and theorist Cathryn Vasseleu underlines two seemingly contradictory aspects of touch: one is 'a responsive and indefinable affection, a sense of being touched as being moved'; the other is 'touching as a sense of grasping, as an objective sense of things, conveyed through the skin'. While the first of these implies a form of openness, the second expresses 'the making of a connection, as the age-old dream of re-appropriation, autonomy and mastery', and 'is defined in terms of vision'. This distinction is of major importance in relation to haptic design; what Vasseleu's remarks suggest is that, out of the two aspects of touch, only one can be considered as 'truly tactile', the other being somehow 'visual' in nature. Stated plainly: depending on whether we adopt the 'tactile' perspective (touch as being moved – an open passage), or the 'visual' one (touch as grasping – a sense of control), the quality of the outcome will be very different. In one case, subject and object are on the same level and the goal is open; in the other, there is domination from one part over the other and the goal is a specific outcome – a pre-determined 'function'.

Domestic Robocop

Of Touch and Power

The intrinsically dynamic property of touch, which is feeling and acting simultaneously, implies an active form of perception that is different from a passive reception

Nanofutures

of stimuli. Although in all sensual activity both passiveness and action are present, in touch, the second is paramount. Therefore designing for touch implies a call to action on the participant; it enables them to drive the experience while remaining self-centered.

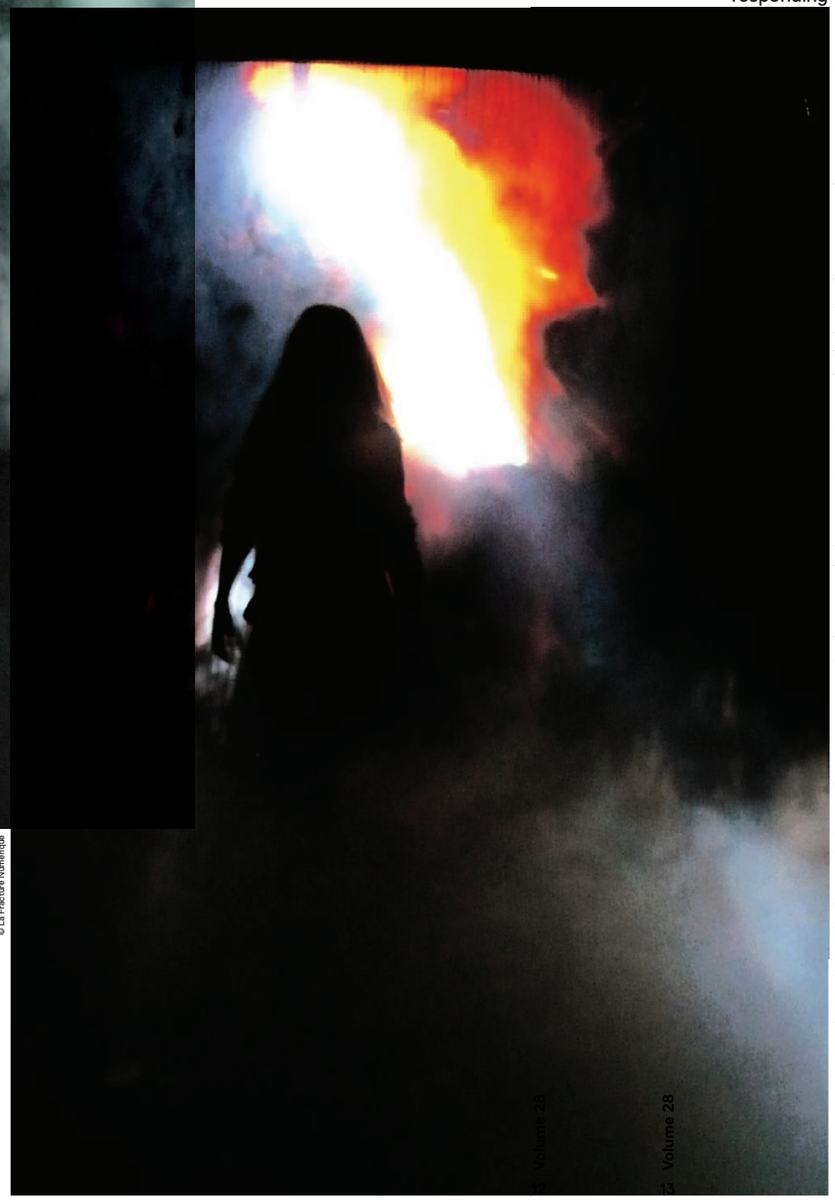
To further clarify, let us analyze what happens in the participant's body. Two anticipation films will help illustrate the purpose. The first, Keiichi Matsuda's *Domestic Robocop* (2010), is an animated movie showing a vision of an 'augmented' future in which media has completely saturated physical space. Direct bodily contact with objects has disappeared, replaced by a visual representation of the hands which, quite paradoxically, conveys an impression of vintage imagery, as if the user's gestures no longer belonged to the realm of natural movements but were a simulacrum of what humans used to do in a distant past. In other words, in the world of *Domestic Robocop* users do not touch objects themselves, but rather touch the *image of touching* them. One no longer grabs a real kettle, but instead we grab the kettle as an icon, as a gate towards concealed information. The act of touching remains present, but in the form of a simulation: we have replaced 'the real thing' (touching) by a simulation of touch.

Considered from the tactile perspective, instead of being augmented this situation could be called reduced reality. But don't get me wrong: I am not arguing against the concept of augmented reality (although I certainly would go for a change of name). I am critiquing simulation, a 'visual', autocratic approach to interaction which surreptitiously makes humans subservient to machines. Simulation is autocratic because it forces the participant into a single point of view (the one 'reality' it is supposed to recreate). This has two major implications: first, the reductive one I mentioned earlier – losing a dimension, exchanging the real for the fake. Second, the necessity to comply with the images' demands which can be huge. In *Domestic Robocop*, for instance, the body is used as the image's 'control panel' – it makes the image system work, activating the different variations and possibilities of the 'film' being shown. Attention is focused on what the image 'does' or 'does not do', following a predetermined program which pushes the participant to carry through a specific choreography. The succession of movements generates a particular quality of sensations which, despite its major impact on the aesthetic experience, is not acknowledged in the design outcome.

John Dewey defined the notion of artificial as being what happens whenever 'there is a split between what is overtly done and what is intended'. In this sense we can say that the system presented in *Domestic Robocop* is truly artificial not because machines or cutting-edge technology are involved, but because of this split – the simulation of touch that suppresses real touch. We could instead envision truly natural ways of embedding and accessing data, ways that start *from* the participant's gestures instead of imposing gestures *onto* him. This approach is well illustrated by Chris Woebken's *Nanofutures: Sensual Interfaces* (2007). According to Anthony Dunne (who curated the 2008 MoMA's *Design and the Elastic Mind* exhibition where the movie was presented), the piece is a reaction to current views on nanotechnology which are primarily related to its capacity to improve functional characteristics of existing materials (e.g., increased resistance, reduced weight). Instead Woebken explored nanotechnologies as new design materials of their own. In particular he focused on 'smartdust' – a hypothetical system of multiple tiny microelectromechanical elements (MEMS) – trying to imagine the type of product that might emerge from this technology and how it could transform the very notion of interaction.

Nanofutures: Sensual Interfaces shows an office worker interacting with his desktop computer through an interface made out of blocks of seeds (the seeds representing smart dust). The user breaks the blocks apart, spreads the seeds, plays with them. While the seed interface still fulfills a functional goal – sharing, breaking, mining data – it is actually the sensual quality of the manipulations that strikes the viewer. Beyond function, one would want to work with them merely for the tactile pleasure they would provide.

© Thierry Galimard



© La Fracture Numérique

La Fracture Numérique,
Une épaisseur d'honneur, 2009

In his 2006 book *Herzian Tales* Anthony Dunne introduced the concept of 'post-optimal object'. For Dunne, 'design research should explore a new role for the electronic object, one that facilitates more poetic modes of habitation'. Considering that technical and semiotic functionality have already attained optimal levels of performance, Dunne argues that the challenge for designers of electronic objects now is to "provide new experiences for everyday life". In that sense *Nanofutures* is a good example of how touch can radically change the way we relate to objects, opening up new possibilities for post-optimal designs.

Touch and Interspace

With the development of ubiquitous computing, architecture has become sensitive. Spaces are now capable of responding to our actions, often in the form of images incorporated into the built environment. A new spatial category, paradoxical, unstable, and neither totally material nor fully digital, is born. Let us call it *interspace*.

Through the articulation of brick-and-mortar and electrons, interspaces create a new perception of reality. The bodily implication intensifies the impression of reality these illusionary environments convey; freed from mediation devices such as the mouse and keyboard, we internalize those spaces as their transformation, sometimes even their generation, happens through our bodies. Just as in any other architectural experience, touch plays a determinant role here for it is through touch that all experiences of space are shaped. Subsequently, if we want to create meaningful spatial experiences using digital media, experiences in which the images and the built space are bound together in such a way that we do not perceive them as separate elements but rather as parts of an organic whole, then the design ought to be touch-driven.

In practice this is not always the case. Here again we could oppose the 'visual' to the 'tactile' as many interspaces today are vision-driven. Within this conception the piece is considered a 'living painting' or 'living movie' and the hosting space reduced to a mere support for the images – a screen. Once again we have lost a dimension: what was originally three-dimensional (a space) has become flat (a screen). Conversely, interspaces designed through a tactile approach feel more real, because through touch a physical connection with the body is created enabling new forms of inhabitation instead of the contemplative type of experience described above. A great variety of forms can emerge from this perspective for there are multiple possible tactile strategies. One example of this is the fog curtain used as a projection support by the Parisian collective La Fracture Numérique (a team composed by a video artist and an architect) in their 2009 piece *Une épaisseur d'illusion*. As the participant walks through it images are projected upon it. Beyond its symbolic role in relation to the installation's theme (illusion), it is the physical contact with the fog, a caress-like sensation on the skin, that creates a feeling of immersion into a new spatial dimension.

Within *interspaces* participants are the inflexion point, the place where multiple dimensions converge. Architects and designers have a choice when addressing this particular role: either pursuing a controlled, predetermined effect, or defining an operative mode that enables open responses and challenges conventional notions of reality. It is this second option where the true aesthetic potential of *interspaces* lies for by questioning the idea of an objective 'reality' – upon which we continue to live in spite of scientific evidence – these *interspaces* can open up new ways of experiencing and understanding space. And it is precisely along those lines that they fulfill a specific role left open by previous languages: the transformation of the material world into a less rigid, more fluid environment.

© Elias Stein

Volume 28