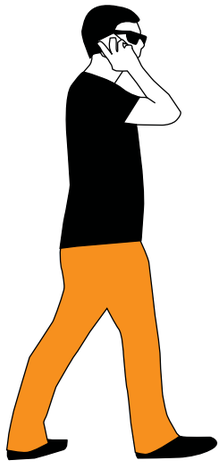

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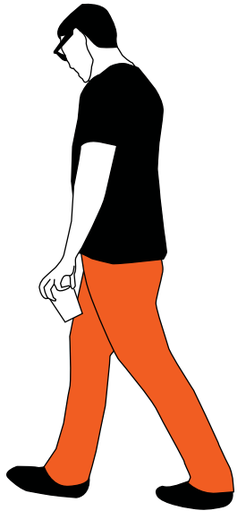

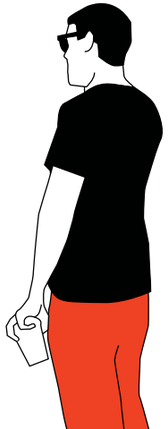

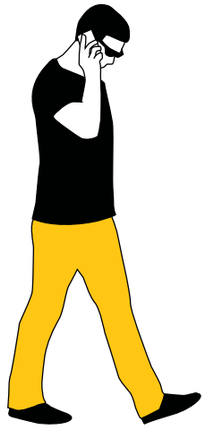

CURIOUS RITUALS

GESTURAL INTERACTION IN THE DIGITAL EVERYDAY

NICOLAS NOVA | KATHERINE MIYAKE | WALTON CHIU | NANCY KWON

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INTRODUCTION

NICOLAS NOVA

"I'm trying to make the moment accessible. I'm not even trying to explain the moment, I'm just trying to make the moment accessible."

William Gibson, No Maps for These Territories (2000)

The term "digital" is intriguing. It refers both to: (1) the use of information represented by discrete values in the form of numbers used by computers, and (2) a manipulation with a finger or the fingertips[1]. So, when one thinks about "digital technologies" such as cell phones, laptops, cameras or video game consoles, this dual definition reminds us of the importance of the body in using these devices.

However, this is in contrast with the overemphasis on the term "virtual" when we describe interactions with digital artifacts. The hidden assumption behind the use of such an adjective is that these digital artifacts are not very engaging from a physical standpoint. That is, people sit at their desks with their laptops; couch potatoes play games on their sofas; commuters stare at their smart-phones in their smart-phone with blue-glow faces. But is this clichéd version of the everyday life true? Are we really so immobile when using the vast panoply of digital apparatuses?

[1] According to Oxford English Dictionary.

This book will contradict that claim. The output of a research project conducted at Art Center College of Design (Pasadena, CA) in July-August 2012, the work presented here focuses on the body language of digital technologies used in everyday life: gestures, postures and rituals[2] that appeared with the use of computers, cell phones, sensors or game controllers.

This seven-week project consisted of two phases:
1. Documentation of existing gestures in the digital everyday. Based on field observations and interviews conducted in different locations in the USA and Europe, we selected a certain number of cases that reveal how the postures and gestures adopted by users of digital technologies would constitute a set of "rituals". However, the study was not meant to be exhaustive. The choices we have made, which forms the core of this volume, should rather be seen as a subjective focus on specific cases that we found relevant. The gestures we selected has been aggregated into seven clusters that can be considered as a snapshot of the issues we encountered in our field observations: classic gestures, nervous movements, fixing strategies, holding devices, vocabulary set by designers, personal tactics to make use of technologies and new social interactions.

2. An exploration of potentially new kinds of gestures and postures in the near future. Based on the behavior we noticed, we were interested in how the type of situations and the motivations we uncovered would appear when using upcoming technologies: How would people skip ads while using their augmented reality glasses? What will be the nervous tics of users who employ facial recognition systems? Will we still gesticulate when using brain-computer interfaces? This exploration has been done through the crafting of a design fiction in a film format.

[2] We use the term ritual without the religious or solemn connotation, referring instead to a series of actions regularly and invariably followed by someone.

Why are we doing this? Why is that interesting? This project is based on my interest in uncovering what French writer George Perec calls the "infra-ordinary", to describe the ordinary and habitual aspects of everyday life[3]. An astute observer, Perec found inspiration in situations, gestures and habits that we often overlook or miss. Using the prefix "infra-", he highlighted the importance of what is underneath or hidden and which could be uncovered as an interrogation of the quotidian.

Regarding digital technologies more specifically, such endeavor is important because it helps to show how the use of such devices is a joint construction between designers and users. Some of the gestures we describe here indeed emerged from people's everyday practices, either from a naïve perspective (lifting up one's finger in a cell phone conversation to have better signal) or because they're simply more practical (watching a movie in bed with the laptop shifted). Even the ones that have been "created" by designers (pinching, taps, swipes, clicks) did not come out from the blue; they have been transferred from existing habits using other objects. The description of these postures, gestures and rituals can then be seen as a way to reveal the way users domesticate new technologies.

Closer to design, the documentation of this current body language can also inform the adaptation of current interfaces, or the creation of products that can support, help or benefit from the gestures and rituals we found.

Equally important, speculation about emerging gestures is meant to explore the alternative uses of digital devices we only see through glossy and slick videos produced by multinational corporations. Beyond the standard representations of the digital future, often staged in aseptic environments, we wanted to investigate

[3] Perec, Georges. 1974. Espèces d'espaces. Paris: Gallimard. ENGLISH: 1997. Species of Spaces. John Sturrock, ed. and trans. London and New York: Penguin Books.

the human situations of the everyday. By showing those moments you never encounter in corporate videos – when augmented reality glasses becomes annoying or whenever sensors lead to awkward social situations – we wanted to adopt a more ironic perspective on those projects sold to us as "inevitable".

The book structure reflects these two phases. In the first section, introduced by a short essay by Dan Hill, the different cases we selected will be described. Each category of gestures and rituals is presented with a visual description as well as a short discussion of their cultural and design implications. The second part, with a fictional essay called "Incident Report" written by Julian Bleecker and the script of the design fiction we produced, then speculates about the near future of body language in the digital everyday.

The design fiction video can be found on the project blog, at the following URL: http://curiousrituals.wordpress.com.

1 GESTURES OF TODAY

21ST CENTURY GESTURES CLIP ART COLLECTION

DAN HILL, HELSINKI

A TEXT FILE

For some years I've been collating a list in a text file, which has the banal title "21st_ century_gestures.txt". These were, or are, a set of gestures, spatial patterns and physical, often bodily, interactions that seemed to me to be entirely novel. They all concerned our interactions with The Network, and reflect how a particular Networked development, and its affordances, actually results in intriguing physical interactions. The intriguing aspect is that most of the gestures and movements here are undesigned, inadvertent, unintended, the hidden offcuts of design processes and technological development that are either forced upon the body, or adopted by bodies.

For a while, I have been "a camera with its shutter open, quite passive, recording, not thinking", simply compiling the list. As a list, it's entirely subjective, incomplete, and essentially pointless. But I kept coming back to it. Some gestures, interactions or behaviours eventually disappeared from the text file; others were reinforced.

This essay gives me a chance to put the list to bed.

Walking around "eating the world with your eyes", as the fictional design tutor in Chip Kidd's novel The Cheese Monkeys (2002)[1] puts it, you can't help but observe the influence of The Network on our world. Yet as The Network is often still spoken about as if it were somehow something separate to Us, as if it is an ethereal plane hovering above us, or perhaps one we might be increasingly immersed in but separate to our bodies, to our selves, nonetheless. This doesn't feel accurate now. There is no separate world, and this list indicates how we are even changing what our bodies do in entirely emergent, or at least unplanned, everyday fashion, in response to The Network's demands.

Yet this isn't a list of weak signals or extreme and extremely unnecessary positions– such as embedding an RFID chip in your arm, Kevin Warwick–but entirely vernacular conditions, performed by everyday people, and in fact created by everyday people.

When working on various projects for the State Library of Queensland in Brisbane[2], I had begun to semi-formally assess how wifi users were inhabiting the space, not simply in terms of the locations they would flock to, or the patterns of social grouping, but how they draped themselves over furniture in new ways, found small pockets of space to hole up in, all while cradling or propping up a laptop or the newer netbooks that had emerged at that point. There were no iPads at that point, but there was clearly a new physical relationship around computing that suddenly left the Library looking askance at its "computer labs" and "drop-in-centres" of PC towers secreted under rows of desks with awkward monitors.

I drew sketches of how the library users were co-opting the spaces and objects, ascribing a name to each type, as if they were yoga positions.

[1]Chip Kidd, "The Cheese Monkeys," 2002.

[2]WiFi Structures and People Shapes", 2008 http://www.cityofsound.com/blog/2008/11/wi-fi-structure.html

Two laptop users sitting with their backs to each other were "Reverse Battleships"; two sitting facing each other were "Battleships"; one, watching a DVD whilst lying flat on her stomach was "Front Crawl"; another, astride a bench, perpendicular to the intended position, was "The Horse", while swinging one's legs over one side of the bench would be "Side Saddle", and so on. I also plotted where people were sitting in relation to wifi signals and building architecture, and discovered clear correlations between people, space, devices and Network.

Similarly, I made a 3D model of the wifi itself, as if it were a physical phenomenon that we could more easily understand structurally, rather than simply connect to. (AHO's "Immaterials: Light Painting WiFi" articulates a similar idea in far more sophisticated fashion[3].) These were all attempts to understand how The Network could be perceived in civic space, yet in the yoga position sketches, I was also interested in how people's movements changed.

The few examples collated are a development of those sketches, and range from small gestures, to those involving the whole body, to those concerning bodies moving through spaces. Each example has a name and a sketch (below). The list in my text file has more examples than are listed here, but these should be enough to convey the idea. This is not really a complete list or clip art collection at all– more a sketch of what one might be, in order to provoke questions.

[3]Immaterials: Light Painting WiFi", 2011 http://www.nearfield.org/2011/02/wifi-light-painting

SIZE S

In terms of small gestures, one which already seems to be dying out is *The Google Map Smear.*

This you see when people are suffering the delightfully-named "international roaming" condition on their smartphone's payment plan, and so are anxious about expensive data transfer.

Fig. 1 The Google Map Smear
In which a user momentarily activates international roaming data and caches adjacent map tiles by smearing the index finger around the user's intended destination.

When in a foreign place, the user will load up the cache in their phone's memory by scooping up the immediately adjacent map tiles with data on, loading enough map to show them the way, and then quickly turn off the data. This scooping is performed in a series of "smearing" circular movements, as if scrubbing the map tiles into life, rubbing a magic lamp to conjure up some locally useful geography. It's unlikely this tiny interaction will persist, as maps cease to be produced via tiling, and roaming data becomes less expensive.

Fig. 2 The Wake-Up Waggle
In which a user approaches a sleeping PC in both an absent-minded and mildly aggressive fashion, and drum on the keyboard whilst rattling the mouse.

The *Wake-Up Waggle,* in which a user approaches a sleeping computer and attempts to rattle it into life by hammering the keyboard or aggressively waggling the mouse, is at first so small as to be insignificant, but what kind of previous object would we interact with in this way? Perhaps kicking a lawnmower into life, or nudging a sleeping dog with your foot, but it feels disturbingly tied to the way we feel about computers; the mild frustration with which we often approach the device, as if it should by now be guessing when we're about to use it. There's a muted irritation here I find perversely appealing.

Note, I haven't included the wipes, pinches, taps and double-taps common to gestures for touch screens. I'm not quite sure why. They are novel and inventive, clearly, but perhaps also deliberately familiar–they don't feel odd at all, and instead mimic our previous interactions with sliders, paper or fabrics. They are also clearly designed.

SIZE M

In terms of bolder gestures and actions which require most of the body, we have the *iPad Photographer*, the *Security Pass Hip Bump* and the *iPhone Compass Calibrator*.

Fig. 3 The iPad Photographer
The iPad is held in both hands a little awkwardly and at arm's length until the Camera app focuses on the intended subject, at which point a finger or thumb is bent onto the touch screen in order to attempt to hit the "shutter release" button.

The iPad Photographer is really a variant on existing ways of taking pictures, but feels awkward and transitional. While there needn't be anything particularly odd about taking a picture with a largeish rectangular-shaped device, it does look and feel odd. The form factor of cameras has hovered around the hand for centuries, even when embedded in cellphones, yet this is a new body shape, requiring both hands holding the device at arm's length while one thumb or finger gropes awkwardly for the in-software shutter button.

The Security Pass Hip Bump, which I first noticed a former client doing repeatedly in the library building she worked in, is particularly enjoyable. It occurs when someone carries their RFID-enabled security pass in their bag, and approaching a sensor, lifts the hip to angle the bag towards the sensor, creating a hands-free connection and activating the lock (the hands are often full of paper files, ironically enough.) It's clearly an odd thing to do, when considered like this–to insouciantly cock your hips towards a small black rectangle on the wall as a form of greeting and personal identification–but can be carried off with a certain panache, admittedly.

When the same security passes are on extensible key fobs, they are articulated as if they were keys; when they are worn on lanyards, it's as if they were simply identity cards from an earlier age, merely "shown" to a sensor rather than a security guard. This is different. It relies on a loose, instinctive, trial-and-errored understanding of the range of the radio waves involved, and the materials involved, and again feels like a form of interaction entirely unforeseen by the designers of security systems.

Fig. 4 Security Pass Hip-Bump
In which a user opts to keep her RFID security pass in her bag and gains entrance to her office nonetheless, through lifting and angling the hip up towards the wall-mounted sensor, which unlocks the door upon successful "handshaking".

Most famously, perhaps, is The *iPhone Compass Calibrator*, which perhaps shouldn't be included as it clearly is designed. Yet the performance, often public, that it entails is appealing enough to warrant inclusion. To suddenly stand stock–still in the street and rotate the little rectangle through an arm's length figure-8 feels almost like a physical incantation, the kind of activity that might lead you directly to the ducking stool in 17th century Massachusetts.

One never stops to consider how it might calibrate the phone's compass; we are simply following orders. What else would we do if Apple told us to do it? People have a frozen, absent, pretty vacant look on their faces as their waves mechanically ape the figure-8 described on their iPhone–although some seem to realise the peculiarity of the gesture and offer up a wry smile. (You'll sometimes also see iPhone users revolving in a circle as their compass finds its bearings, doing a little waggle-dance with the electronics.)

Fig. 5 The iPhone Compass Calibrator
Upon attempting to use Maps app, user is required to move the iPhone through a figure-8 pattern within a vertical plane in order to locate the compass.

SIZE L

Then there are the larger spatial conditions, in which a person interacts with others, and/or The Network, moving through a space.

Fig. 6 Cellphone Wake
User moves through a busy street, focusing solely on smartphone in hand (either reading or typing or both), such that the oncoming pedestrians are forced to flow to either side of him grudgingly.

Cellphone Wake is probably not that novel. Walking down a city street reading a book or newspaper would have had the same effect on a moving crowd a century earlier, but perhaps few would have done it. Now, it occurs frequently, and due to the arguably deeper cognitive load involved in engaging in reading and typing simultaneously, we might expect the ballet of the sidewalk to now rely on a heightened sense of "civic proprioception", an awareness of one's body in a bounded space of constantly moving objects, constantly yet subconsciously scanning to detect collision. The agent-based pedestrian simulations used to model subways and streets are only just beginning to understand the effects of these interlocking wakes.

While Cellphone Wake is irritating to observe, never mind get caught up in, when a *Meeting Room Wake-Up Call* occurs, it's a delicious sight to behold. One of my perennial concerns is in designing systems that enable active citizens. Many technology-led "smart building" visions actually tend towards creating passive citizens, who outsource decision-making about their environment to software running algorithms based usually well beyond their control, with data derived from simple sensors. In this way, passive inhabitants also abdicate their conscious participation within their environment. Passivity of this type cannot create a "smart building", almost by definition, nor will it reverse the irresponsible decision-making culture that created unsustainable automated buildings and spaces.

So there's a secret delight in seeing people interact with technology like this, in seeing the sheer physicality of their interactions – seeing a Serious Meeting of businesspeople suddenly waving their hands in the arm like they just don't care, in order to wake up a trigger-happy motion sensor. This is beyond simplistic arguments about simply re-calibrating the sensor; while it's not particularly to do

with The Network, this performance, when thought of more broadly, effortlessly reveals the absurdity in much of the "smart building" idea.

Fig. 7 Meeting Room Wake-Up Call
During business meetings, preferably serious ones, a moment's stillness in the room can trigger an over-active motion sensor that plunges the room into darkness. Meeting participants must re-activate motion sensor through sudden and impromptu performance of manic arm-waving.

I first consciously noticed *Wifi Dowsing* during the aforementioned post-occupancy evaluation of the public wifi at the State Library of Queensland in Brisbane, spending hours watching how people use wifi. As one section of the library closed for the day, visitors would wander out with their laptops still open in front of them, staying connected and looking for the strongest wifi signal.

Fig. 8 WiFi Dowser
In order to achieve maximum throughput over a wifi network, users meander around a space, holding tablet or laptop out in front of them, occasionally watching the signal strength indicator, until optimum compromise of signal and space is located.

Ultimately, users gathered near largely anonymous wireless access points; through trial and error, and watching their devices, they' manoeuvred themselves towards the best position in terms of The Network, rather than the best physical space (or at least, some good compromise of both.)

This seemed redolent of the ancient act of dowsing, or doodlebugging, for water, a form of divining trying to perceive and locate a hidden flow – although with rather better results than the entirely spurious practice of dowsing. Neither public spaces or laptops are designed with this movement in mind.

CLIP ART SOCIOLOGY

I've drawn these in a kind of 1950s newspaper illustration style, often seen in classified ads at the time, and now used as clip art (they're actually adapted from originals some kind soul uploaded to Flickr.) Those ads, and indeed the subsequent clip art[4], often work as some kind of inadvertent "training manual for modern life". They prime us for what typical behaviours are; or should be, given their aspirational momentum. At any one time, we might read clip art as a description and guide to the stereotypical environments and interactions of our world.

Clip art such as this usually describes a form of physical interaction, in space, bereft of content or theme. They are simply "man sitting at desk", "woman, smiling, answer phone", "people dancing", "office party", "shop interaction". They describe context but not content, so that they might be freely used to underscore numerous different narratives. They are a frozen moment of interaction, with no before or after. In this aspect, I've often thought they usefully highlight the kinds of interactions performed, and spaces inhabited.

It's why David Rees's legendary comic strip "My New Filing Technique Is Unstoppable" is quite so funny[5]; in its crude clip-art bastardisations, it highlights the mismatch between an age lived on The Network (us) and the office culture of the near past (them). It freeze- frames people (mis)filing paper into filing cabinets and playfully and profanely deadpans them into an absurd alternate universe, which tells us as much about contemporary corporate-speke and the thrill of

[4] Clip-art sketches derived from the "Bart&Co. Historic Clip Art Collection" at http://www.flickr.com/photos/bartsol/sets/72157627595663028/with/6384326501/

[5] David Rees, "My New Filing Technique Is Unstoppable", 2002 http://www.mnftiu.cc/2007/11/01/filing-000/

The Network as it does about the ‘80s or early ‘90s office environments its characters seem to be drawn from.

I transcribed some of the emerging behaviours of our modern world into this language of clip art, to similarly freeze, distill, highlight and to provoke a discussion as to whether they are simply peculiar blips or transitional hints as to where we’re going next, taking an everyday performance and stripping it of its context, pinning the butterfly under the glass.

Perhaps the incongruousness of the sports jackets helps too.

COULD HAVE BEEN CONTENDERS

We can argue about these particular examples all day. Some entrants on the list get removed upon consideration. A man stooping and pointing his phone to capture a QR code at the bottom of some advertising hoarding, as I saw in the street in Helsinki the other day, is really only a variation on the photo-taking pose.

Certainly, the act of taking photographs has changed shape due to digital technology. Where once the camera was generally brought up to the eye, now it is more often active at arm’s length, thanks to LCD screens on the back, and the “fire and forget” sensibility enabled by cheap storage; or increasingly, a cloud-based upload from mobile meaning storage isn’t even an afterthought. (Whereas those of a certain age will remember how precious each of your 24 or 36 shots on the roll of film used to be.) The freedom of movement these developments have delivered have been exploited by professional cinematographers and the average punter alike. But it is only a variation on a previous mode, and equally, many photographers will have shot at arm’s length for as long as cameras have been light enough to do so. There is nothing to do with The Network about this performance. (How might the physicality of taking a photograph change due to The Network?)

People certainly move in a distinctive fashion when they’re talking on the phone. I observed our two year-old daughter talking into her plastic Hello Kitty pretend-phone and airily meandering around the apartment, brushing her fingers absentmindedly over surfaces, just as her mother does, as she talked to her

mythical mystery companion. You might argue the Bluetooth headset or the iPhone's earbud-based mic has freed up one hand, but the essential stance of Being On The Phone hasn't changed as a result of The Network.

Even an intrinsically contemporary product like the Nike Fuelband is interacted with like a wristwatch, just as the laptop is essentially operated like a typewriter. Even what the body does in an achingly new game like Tearaway on the PS Vita, which features a riot of interaction design breakthroughs, would essentially be familiar to a child's imagination (blowing on characters or tilting platforms to knock them over, or using fingers as puppets, for example–the novelty is in the fact that the characters are digital and Networked, rather than in the gestures themselves.) It's why these interactions work, and again, they're entirely designed this way. All would be familiar, one way or another, to someone magically transported from 1955, say, even if the outcomes of those gestures would be largely beyond their comprehension.

IMMATERIAL WEIGHTLIFTING

But these particular interactions should seem odd to the time traveller, just as they seem slightly odd to us, when highlighted in this way.

These physical acts all make it evident that there is no separate "virtual world"; our very bodies are shaping our digital interactions. We are part of The Network, and not just intellectually, in terms of our projected persona and identity, but physically. The body is making The Network visible, legible. Tracing the articulation of the hips, hands and arms is really tracing the seams of The Network.

We have a long understanding of how the body creatively interacts with invisible forces. If you watch footage of Jimi Hendrix, you can see how he used his body to shape his guitar's feedback; the sound is produced by the interplay of his guitar, its pickup, the speakers, the room, and his body within an electric field, in space, over time. In similar fashion, sensors and actuators are also at play within invisible fields, equally shaped by the body, as well as objects and spaces.. We need to think in terms of these fluid immersive interactions, material and immaterial–or "transmaterial as Mitchell Whitelaw[6] would say–which we are part of physically as well as intellectually. This implies the conceptual separation of Hardware and Software and Us no longer stands.

Unlike the objects that are being interacted with–here deliberately represented as characterless rectangles–the bodies reveal the patterns of information exchange. Rather than passive users in meaningless space with screens bringing all the

[6]Mitchell Whitelaw, "After the screen: Array aesthetics and transmateriality", 2011 http://teemingvoid.blogspot.fi/2011/04/after-screen-array-aesthetics-and.html

action from elsewhere, these interactions foreground the idea of "Screen as object in the world, rather than window to somewhere else", as Whitelaw puts it. "Window to somewhere else" has been around for a long time, yet as Whitelaw's essay "After the screen" suggests, we are now working with "glowing rectangles" in a new way, and sometimes interacting with The Network via objects in the world without screens, rectangles without the glow.

The kinetic energy expended in the extravagant contortions of the *Security Pass Hip Bump*, or even the subtle twitches of the *Map Smear*, suggest the transactions at play rather more than the objects themselves do. You can almost viscerally feel the tiles being created during the latter.

As Bruce Sterling observes in Shaping Things[7], the objects are merely "material instantiations of an immaterial system", and relatively faceless ones at that, whereas the immaterial system is the aspect whose "informational support is so overwhelmingly extensive and rich." Perhaps it's in the body that we sense that weight of information elsewhere?

In 1985 Italo Calvino wrote "It is true that software cannot exercise its powers of lightness except through the weight of hardware[8]." Time has passed, and not only has the heaviness of hardware dissolved into lightness, one of Calvino's qualities for "the next millennium", just as Sterling suggests the counterpoint of the weight of associated information, but the body has also become a vessel for software, a site for the Network to express its dynamics, well before we explore the next wave of wearable computing.

[7] Bruce Sterling, "Shaping Things," 2005.

[8] Italo Calvino, "Six Memos for the Next Millenium," 1985.

TYPE "EARLY FLYING MACHINES" INTO YOUTUBE

Speaking of lightness, when we look back at old movies of early flying machines, we see frail bodies trapped in awkward wooden frames, some of which can hop unpredictably in and out of the air, as if a plastic bag blown along by the wind, while others plummet headlong from jetty to water with all the sense of purpose that gravity can muster. Those bruised and soggy aviators that had been flapping articulated arms we can now discount as pursuing a developmental dead-end, though it was probably worth a try at the time. In others, we can see the blueprints of successful subsequent flights emerging before our eyes.

These contemporary actions are similarly unpredictable. We don't know if the *Security Pass Hip Bump* is actually a precursor of what happens when our clothes are made of smart fabric derived from nanocellulose fibres, and we use the combination of body and fabric to receive, transmit and display data. Is it a form of prototype, or is it simply an absurd contortion inflicted upon us by an ill-positioned sensor?

They leave us to wonder whether we have designed "things which are in harmony with the human being and organically suited to the little man in the street", as Alvar Aalto put it. Perhaps these all too human responses indicate we actually have, totally inadvertently? Or that, just as the street finds its own use for things, our stereotypical physical movements simply adapt, if the promise of The Network is worth it.

[9] Alvar Aalto, speech in London, 1957

You might argue over these choices; that's the point. Such behaviours come and go every day, perhaps of which we are only to observe. These are all transitional, and at this point they tell us about here and now; in other words, at this point they tell us about this point.

But over time, when you watch enough, and log the iterations, they might hint at where we're going, at our future physical interactions. Bruno Munari once wrote that the repeated use of a wooden spoon for stirring and testing soup not only wears the spoon down, but also "it eventually shows us what shape a spoon for stirring soup should be[10]."

We can't see that creative wear and tear taking its effect upon The Network and our interactions with it, at least through this lens. Unless we discuss it, we can't recognise the shifts in physical and social interaction occurring as a result of something that is often invisible, or leaves little trace either way, and whose objects are discarded with a frequency that would make Munari wince, and the simple wooden spoon feel quietly triumphant.

What we're watching here are suggestions and explorations as to how we might physically interact with The Network. Just as those early films of flying machines are equally absurd and prescient, these contortions and behaviours might contain the clues of our future interactions.

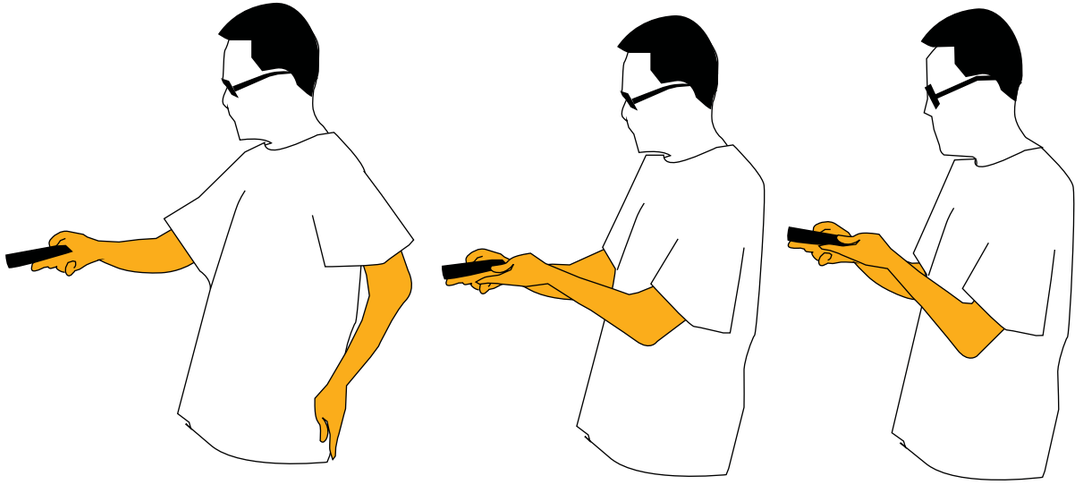
Building an unfinished catalogue of them, as I have here, is also absurd, clearly; I leave it to you to do the prescient bit.

[10]Bruno Munari, "Design as Art", 1966.

THE
CLASSICS

THE CLASSICS

CLICKER CASTING



A standard apparatus in our daily life, the TV remote control isn't what human-computer interaction (HCI) researchers would call a "gestural interface". Indeed, most of the the rectangle boxes filled with buttons we had in the last fifty years do not not include any specific motion sensors. Yet, try spending some time with anyone using a TV or DVD clicker, you will inevitably notice the person making odd gestures. A classic RC move consists in the user raising the remote right in front of him, forcibly pressing the buttons or shaking it up and down. These micro-gestures are mostly performed when there is a gap between performance and intention. But these gestures can also correspond to a specific phase of TV interaction. Think about how people throw the clicker on the couch after they've settled on what they want to watch.

Now that current consumer electronics companies are jumping on the motion-sensor bandwagon, it is intriguing to note the vocabulary of gestures selected. The motion-controlled TV models released at the beginning of this decade integrate a set of gestures borrowed from smartphones (pinching, sliding) and video game consoles (waving, pointing).

The aforementioned observation offers an alternative way of thinking about designing interactivity between people and devices. What would a smart remote control look like that elaborates on pre-existing gestural vocabulary people already developed with their sensorless devices?

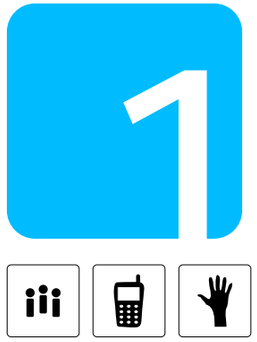
THE CLASSICS

HAUNTED INTERFACES

This gesture is the video-game counterpart of the previous case: shaking a game controller with no motion sensor. It can often be observed with people playing games they are not necessarily used to, in particular racing games such as Mario Kart. Chances are, their physical gestures while playing would inevitably echo the action they aim to control onscreen: leaning left, when steering left, leaning right, when turning right.

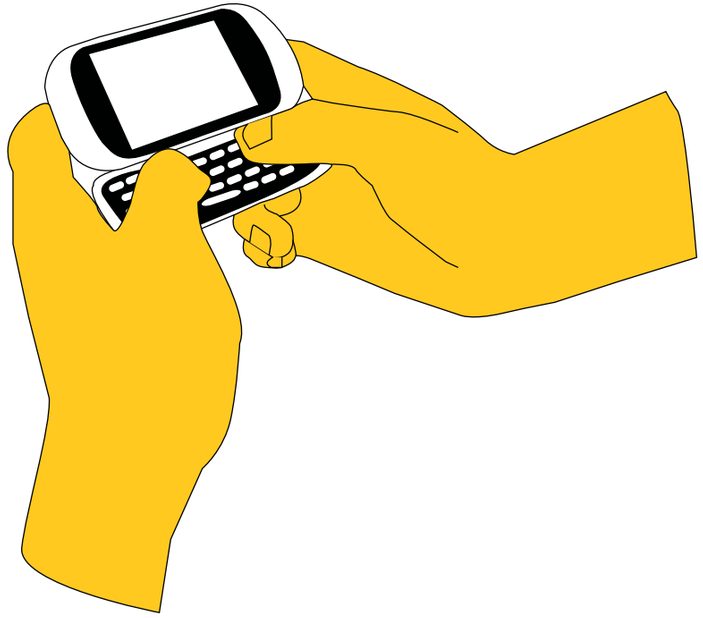
For new users, manipulation of the car steering wheel serves as the mental model for his interaction with the game. It is interesting to note the apparent mismatch between a steering wheel and a game controller does not prevent users from transferring gestures of one category to another. It is as if these movements are fundamentally embodied in a way that their employment is automatic or done without thought.

Though mocked by players with more skills, these gestures provided an unexpected design strategy we adopted for a video-game project I was involved in a few years ago. At a time when new gestural interfaces such as Nintendo Wii and Sony Move appeared on mass market, our focus on casual players and their unconscious moves provided useful insights about gaming in general and gestural interactivity in particular. We would develop a prototype and invite casual players to participate. Their “naïve” gesticulation would then be included and re-incorporated back to the vocabulary of gestures we were creating for our game interaction.



THE CLASSICS

THUMB TEXTING



Once the poster child of "Generation Y" and Blackberry-addicted business people, thumb texting refers to the expert reliance on the finger as a way to write text messages (SMS) on cell phones without necessarily looking at the screen. Because mobile devices at the time relied on numeric keypads with multiple characters mapped to each button for input, composing a message required extensive thumb-banging. The repetitive use of this digit could potentially result in muscular cramps or repetitive strain injury (RSI).

The problem with conventional text input in current mobile devices is that the gesture we adopts while texting or emailing runs counter-intuitive to ergonomics of the human hand from an evolutionary perspective.

However, the increasing popularization of touch-screens nowadays, on which texting could be slower, seems to indicate that the thumb might play a less prominent role as we transition to a different mode of interaction. That said, the good ol' keyboard is still the major interface on low-end cell phones. It might not be apparent, but thumb-texting is here to stay. At least for a while.

THE CLASSICS

DIGITAL JUGGLING

The multiplication of digital devices, and its corresponding proliferation of screens, often results in “digital juggling”. This happens mostly in situations where devices are used simultaneously.

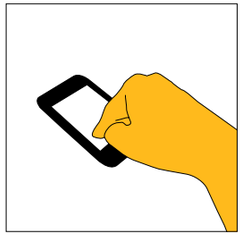
This is a gesture readily found in drivers. More often than not, when hands are not actually “driving”, they are fidgeting with a phone, an MP3 player, both, or some other combination. Driving while juggling multiple devices is obviously a tricky and dangerous proposition. We have seen a particularly dexterous driver steadying the steering wheel with her thighs, changing to a different song on her MP3 player, all while holding her cell phone in another hand.

Should designers discourage multi-tasking then, when they are thinking about the next generation of devices? Or should we celebrate the spontaneous gestures as a result of device juggling? In the end, it is hard to settle the multitask vs single-task debate, since multi-tasking ability varies between people and because certain tasks require more attention than others.

PRESET GESTURES

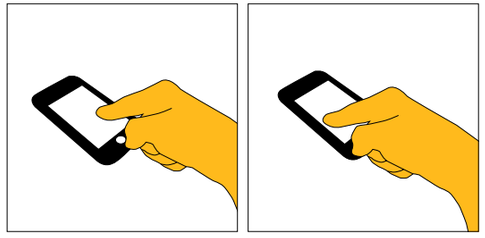
PRESET GESTURES

TOUCHSCREEN GESTURES

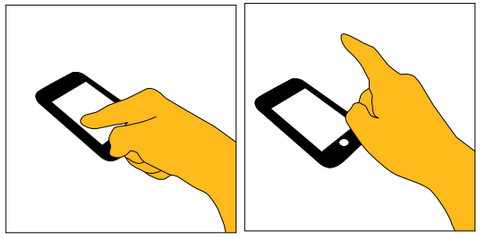


Tap/Double tap

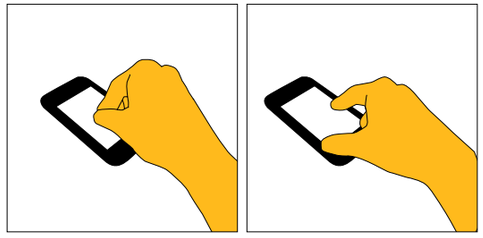
Hold/Press



Drag/Slide



Swipe/Fling/Flicker



Pinch close/Spread

Touch gestures is a set of standardized motion we use when interacting with multi-touch digital devices such as smartphones (Apple, Android), tablets and other interactive surfaces (tables). The advantage of touch gestures is that it allows for direct manipulation, and as such, utilizes our existing understanding of object manipulation in the physical world. Due to product differentiation, however, there is a certain level of inconsistency in the gestures proposed by software companies and hardware manufacturers.

Tap/Double tap: By touching the surface with a fingertip, user can initiate an action, select links or push buttons on screen. Depending on the Operating System, a double tap (tapping twice) can be required for a similar purpose. On the iPhone OS, the double tap can be used for zooming.

Hold/Press: Pressing and holding the tip of the finger on the touch screen, the gesture is often used for opening a pop-up menu or selecting an item.

Drag/Slide: Moving the tip of the finger over the surface without lifting it from the screen; allows scrolling and drag-and-drop.

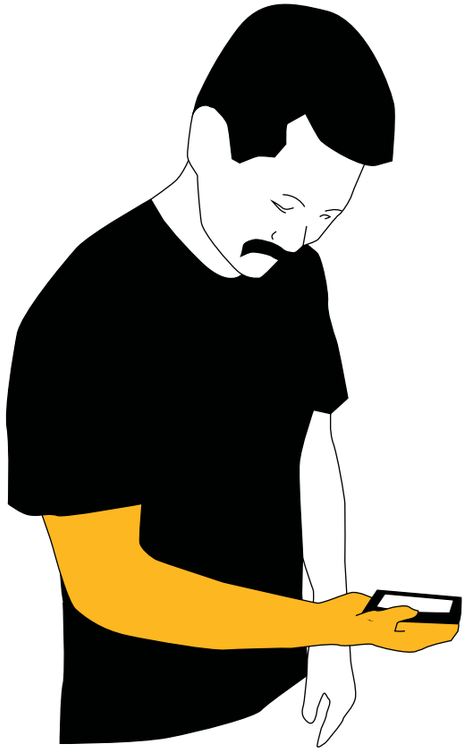
Swipe/Fling/Flicker: Used to scroll, to pan, or to quickly move objects, the finger is placed on the screen and swipe in the desired direction.

Pinch close/Spread: Used for scaling and zooming out, users place two fingers (thumb/index or other combinations) on the screen and move them farther apart without losing contact with screen.

2

PRESET GESTURES

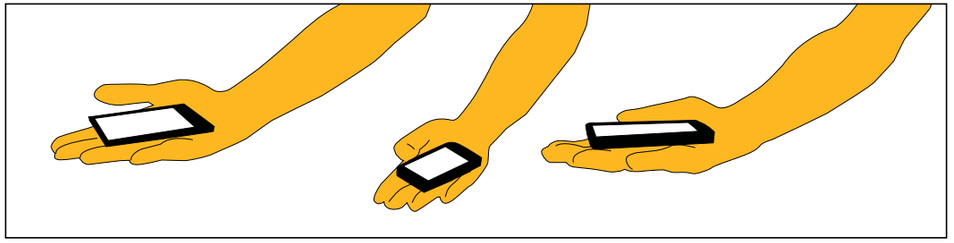
ANGRY MONKEY



Smartphones such as the iPhone have a built-in digital compass that work just like a traditional magnetic-needle compass. However, its accuracy can be influenced by environmental interferences such as the ones produced by the magnets in the iPhone earbuds.

This means the digital compass within the phone needs to be recalibrated from time to time. Rotating the device in a figure 8 motion until the calibration screen disappears, Apple's proposed gesture for the task, in our opinion, makes the user looks like an "angry monkey".

Performing calibration gestures, such as "gesticul-8", is new to users of sensor-enabled devices. The growing omnipresence of sensors in most new digital devices seems to indicate a growing necessity to adjust digital technologies not only to our needs, but also environmental conditions: potential interferences, change in magnetic fields, even weather circumstances. The potential drawback of sensors is clear: although they detect external information on their own and could adapt accordingly, sensors require proper calibration, which often involves human assistance. As a socio-technical assemblage, the use of sensors in digital devices is a clear example of the inherent necessity of cooperation between human and machine, even in performing basic tasks.

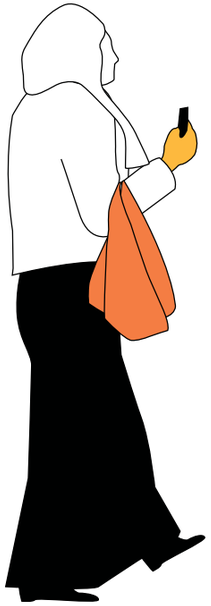


PRESENTATION OF SELF

PRESENTATION OF SELF

3 PHONE HOLDING HABITS

The diverse ways we hold our phones, especially when not calling other people, lead to a characteristic set of postures. Observed in public places, they depend on various factors ranging from the task at hand (checking emails, browsing, not looking at the phone, expecting a call) to external conditions (light, presence of a place to leave it safely). However, the ways we present ourselves to the public also play an important role in the way we hold our phones; these habits are often more intuitive, a natural extension of our physical manners and the way we inhabit space in general.



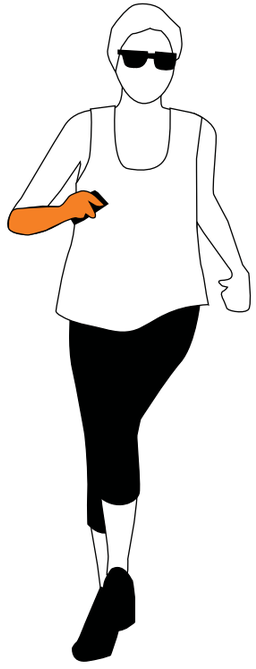
The Busy Shopper: Held at shoulder level, along with handbags or shopping bags, the phone is conspicuously shown as an accessory to passersby and automatically reachable should someone call.

The Prayer Book Reader: This is a gesture that potentially has its origin in paperback book reading where the object or text is held between two hands. The "prayer book" user solemnly grips the device in a way that may reflect the nature of the task performed (reading a long webpage, contemplating pictures).

The Obsessive Checker: These digital obsessives have their cell screen within reaching distance at all times. They repeatedly lean their heads down, checking for signs of any potential updates such as SMS, emails, or any app notifications.

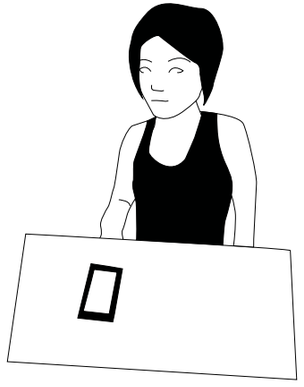
PRESENTATION OF SELF

PHONE HOLDING HABITS



The Active Companion: A variation of The Busy Shopper, it is commonly encountered with runners, often due to the lack of pockets in athletic wears. In this version, the phone is held in the hand and follows the swing of the arm.

Under the Radar: Under certain circumstances, it is important to keep phone usage inconspicuous. (Driving and talking on a handset is illegal in many states.) To sidestep the issue, some drivers would leave their phone on their lap while driving.



The Third Arm: Not exactly a gesture, this corresponds to the user leaving her phone close by at any given time, even during sleep. The device becomes, in this instance, a digital extension of our body, or a not-too-distant prosthesis if you will, accessible whenever it is needed.

PRESENTATION OF SELF

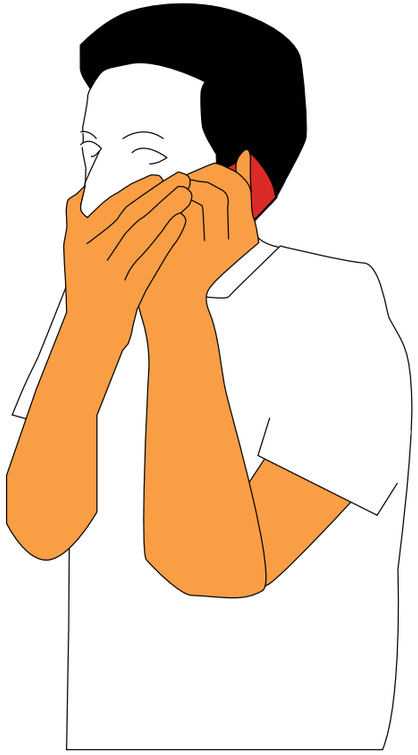
3 FUSSY OWNER SYNDROME

Comforting micro-gestures can be seen as a form of basic “personal blanket” in social situations and feeds into the user’s quasi-obsessive need of information or social contact. They correspond to any discreet and furtive gesture that aims at checking incoming changes on the phone: time, SMS, calls or app notifications on smartphones. Most of the time, these moves are very simple and do not involve the whole body. Depending on the user’s posture and phone location, the possibilities can be the following: leaning towards the phone and adopting what chiropractors have dubbed the Forward Head Posture or text neck position (when in the “third arm” state as shown previously), reaching out the device on one’s lap when driving, whipping out the phone from one’s pocket, etc.

More specifically, Fussy Owner Syndrome describes users who pay attention to their personal devices on a granular level. From a design standpoint, it highlights the diversity of personal rituals between user and devices. Is this a need we have to consider when designing hardware and software? Wouldn’t it be relevant to integrate different personalized paths for certain applications based on individual rituals?

PRESENTATION OF SELF

BABOON’S FACE



As the American sociologist Erving Goffman[1] puts it “sound interference” can cause an offender to “violate the territory of others by carrying out an encounter over a longer than proper distance.” Instances of such “acoustic interference/sound pollution” is common, especially at restaurants or on public transits. Although not an issue with some people, others have come up with ingenious solutions to avoid being that loudmouth in the room.

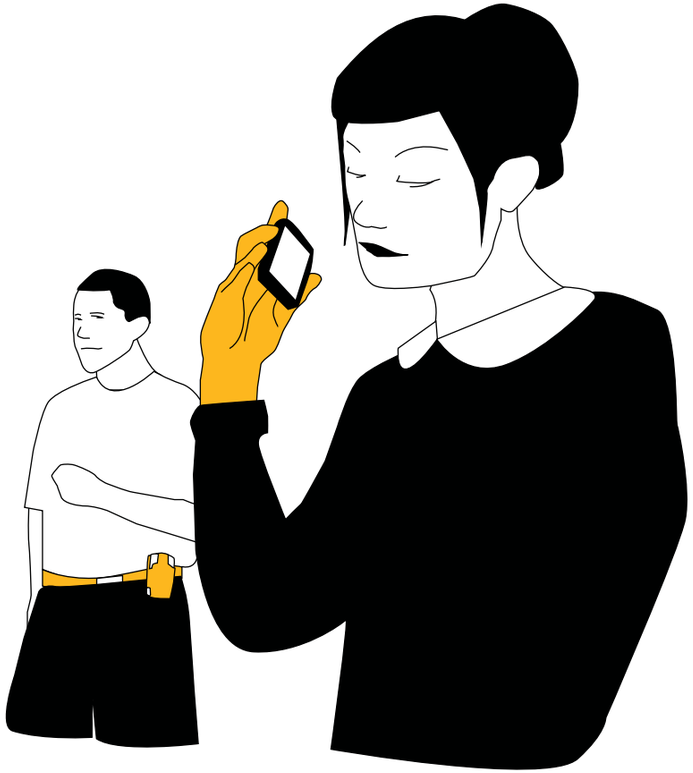
“Baboon’s face” is is a gesture where the speaker covers both his mouth and the phone throughout the entire conversation. It keeps the conversation private, yet also shows consideration for both the speaker on the other end of the line and others in the vicinity of the speaker.

Designers in particular have been very interested in the gesture and a whole menagerie of apparatuses has sprung up around it, from high turtlenecks to face masks. Would our next set of bluetooth headset come with a mouthguard as an accessory?

[1]Goffman, E., Relations in public: Micro studies of the public order. New York: Basic Books, 1971.

PRESENTATION OF SELF

3 LOW DOSAGE



Cell phone communication is based on electromagnetic waves exchanged between mobile devices and cell towers located in the vicinity. When talking on the phone, a transmitter encodes the sound of the voice into a continuous wave which is then propagated by an antenna. The position of a transmitter inside the device varies depending on the manufacturer, but is usually next to the phone's antenna.

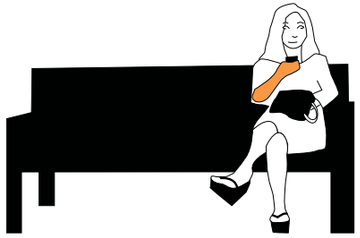
Because of the principles described above, all cell phones therefore emit some electromagnetic radiation. Given the proximity of the phone to our head when in use, many callers worry about potential health hazards.

The most straightforward way to avoid exposure is to use a headset. But many stranger gestures have developed as users try to balance audio quality and potential radiation exposure. One such example is holding the phone in a way so device never touches the user's skin. From a distance, it looks as if the user is holding an electric razor to his cheek. Others who are even more worried about the potential side effects of radiation exposure have been observed to resort to shielding protection like a pouch, a sock, or even gloves.

3

PRESENTATION OF SELF

SECURITY BLANKET

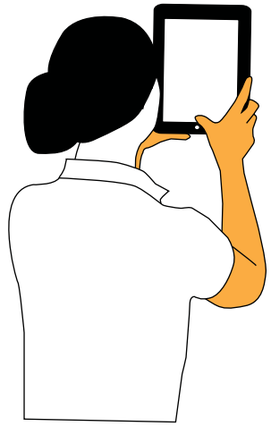


Delivering text messages and calls, the cell phone represents a potential security blanket for its users. It does so in its ability to allow communication. Nevertheless, with an ever-increasing set of features available on smartphones, the phone is no longer just an emotional umbilical cord to friends and family. The rise of games, newsfeeds, social media, or any apps that are meant to “kill time”, means even when stalled in traffic or waiting in a queue, the opportunity to daydream has diminished.

A common “security blanket” scenario: A and B run into C while walking down the street. B starts to chat with C. Instead of joining in on the conversation, A steps aside, whips out his phone and starts to go through his Twitter stream. In the instance, a potentially awkward social moment is sidestepped! Although A’s behavior could be interpreted as impolite, a certain level of interactivity still exists between the trio. Even if A is not directly engaged in the conversation, there could be signals that the conversation is about to come to an end and that the duo is about to resume their walk.

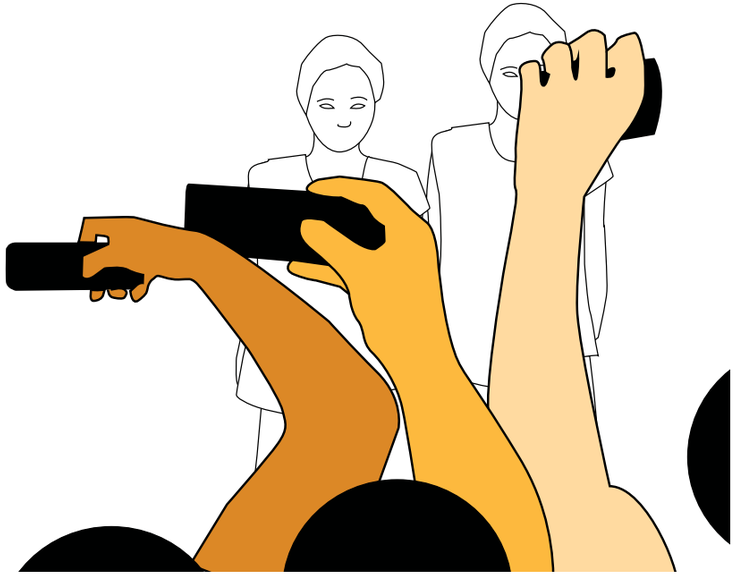
PRESENTATION OF SELF

3 THE PERISCOPE



This is a common pose when people take pictures, record videos or use Augmented Reality applications that show an overlay of information on their cell screen. Many users have become accustomed to holding the phone at arm's length, in order so see the screen, compose a shot, or simply read the content displayed.

Users also deploy their arm as if it's a periscope when trying to focus on something not at eye level. Holding a phone for too long in this position may lead to a problem commonly encountered with gestural interfaces: the "gorilla arm", which refers to the heaviness one feels in one's arm after holding a device out for any significant length of time.



The move is even more fascinating when seen in public venues such as concerts or sports events; where it becomes a new social ritual for the crowd, performed together as if the spectacle is secondary to the data collection process.

The periscope gesture is interesting because it is associated with the smartphone, which is a hybridized device. The way we hold a smartphone is a natural extension of how we used to hold a camera. Would future technological associations lead to similar gestural hybrids? Can we benefit from this knowledge to design more ergonomic products?

PRESENTATION OF SELF

3 CELL TRANCE

People walking around when talking on their mobile phone is a common behavior. Referred to as "Cell Trance" in the Urban Dictionnary[2], this way of moving back and forth is often seen in public venues such as hallways, sidewalks, train platforms, bus stops or shopping malls. To onlookers, the erratic perambulation looks aimless, as if the caller is detached from his surroundings, absorbed in a private sonic universe.

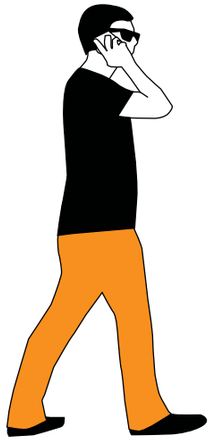
[2]As described at the following URL: http://www.urbandictionary.com/define.php?term=Cell%20

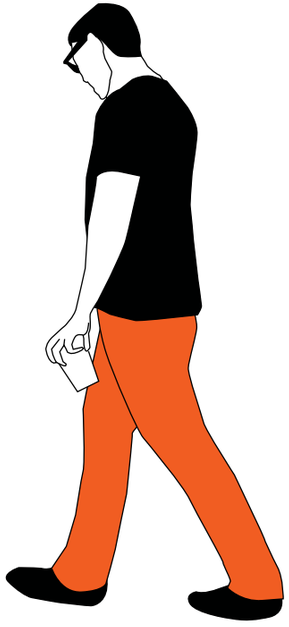
From a different angle, a parade of people in "trance" tells a different story. First and foremost, moving around when talking on the phone appears to be a standard urban tactic aimed at seeking areas favorable to the conversation at hand, or advertising the fact that one is already engaged. Privacy is another important issue: "pacers" may move around in order to avoid eavesdropping. In addition, such effort can be geared towards limiting our disruptions to the public. Interestingly, the trajectory of a trance, with its pause and movements, often mimics the rhythm of a phone conversation.

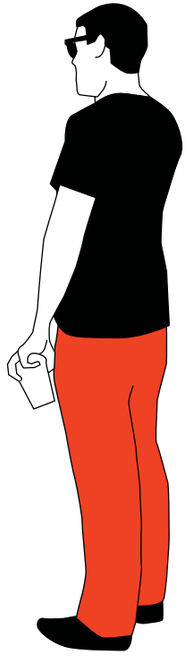
Finally, one can also hypothesize that these trajectories reflect the way users unconsciously "stage" their presence in public. Cell Trance may indeed be similar to the way iPod and Walkman users used to synchronize their movement with their music[3].

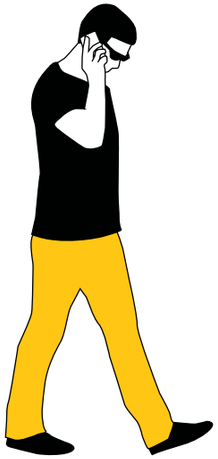
Texting when walking is a relevant variation to Cell Trance. The visual focus such multi-tasking entails could potentially be dangerous to the user! So much so that anxious developers have already developed phone apps that display what's directly in front of the user when typing on the phone to prevent such accidents.

[3]Thibaud, Jean-Paul. The sonic composition of the city. In : Bull Michael & Les Back (Eds.) The AuditoryCulture Reader. Amsterdam : Berg Publishers, 2003, pp. 329-341.

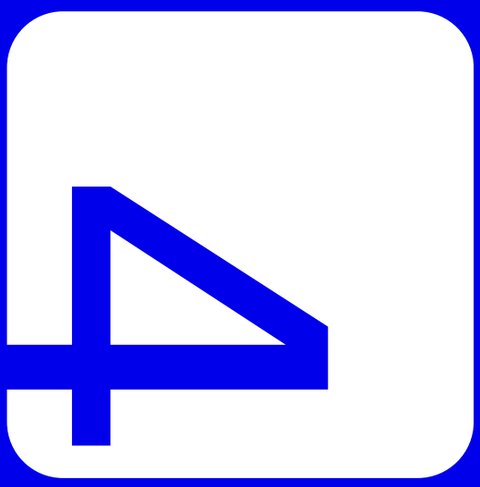








PERSONAL TACTICS



PERSONAL TACTICS

4 SENSOR JIU JITSU

Sensors, whose job is to detect changes in the environment through electronic components, are now more and more common. They serve different purposes, ranging from surveillance (alarms, CCTV) to environmental monitoring (pollution, traffic) and home automation (light detector, temperature control). Many shops have motion sensors that announce the entrance of potential shoppers, triggering noises or audio messages when people passes by. These sounds can either be used to greet people when they come in or trigger an ad for a particular product.

Irritated customers in turn have figured out ways to avoid being detected by these sensors. One can see them leaning on their side, or even squatting, when passing by their favorite alley in a supermarket equipped with theses devices. This type of urban “Parkour” looks playful at first glance. However, it also illustrates an instance of user “domesticating” a technology for his own purposes. Reverse-engineering such device is not easy as the sensor presence is generally unobtrusive. As we will see in upcoming examples, mastering sensors seem to have became a new skill set in the 21st Century.

PERSONAL TACTICS

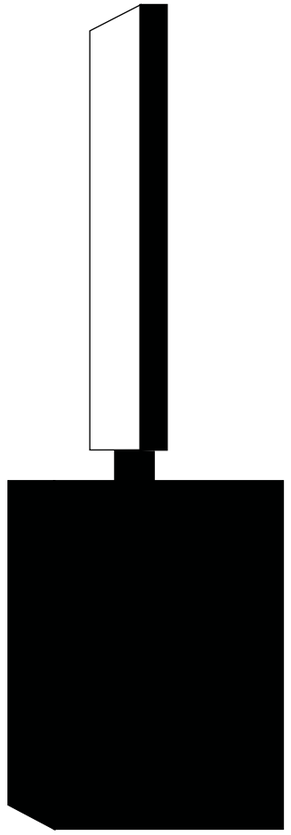
4 BAG SWIPING

In the last decade, several major transportation systems in the world have replaced their magnetic tickets with RF (radio frequency) Tagged transit cards. Such pocket-sized cards have been increasingly popular and can often been seen being used for payment in fast food restaurants, vending machines, convenience stores or photo booths.

In public transport such as subway and tramways, their usage has progressively led to new and curious rituals. The original plan was basic: the passenger swipe her ticket at the gate or turnstiles. Over time, however, this changes as commuters discover easier ways to get the job done. They simple swing their wallet or handbag over the scanner, without bothering to take their cards out. Besides, who has the time? Commuters who do the wallet-or-handbag-swipe don't even break their pace, they just learn to swipe in full stride. This is what the American writer and designer Adam Greenfield called "information processing dissolving in behavior": an interaction between a person and an information-processing system that proceeds automatically without the consciousness of what is taking place[4].

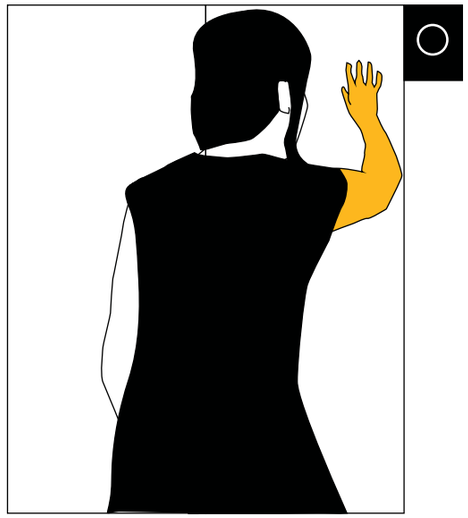
This example is relevant for interactive product design for two reasons. First, because designers don't often design the proper use of a technology. Users generally re-approriate and domesticate technological objects in their own peculiar ways. Second, it could be seen as an indicator that unconscious transactions will become much more prevalent in the very near future, with all the potential complication this entails.

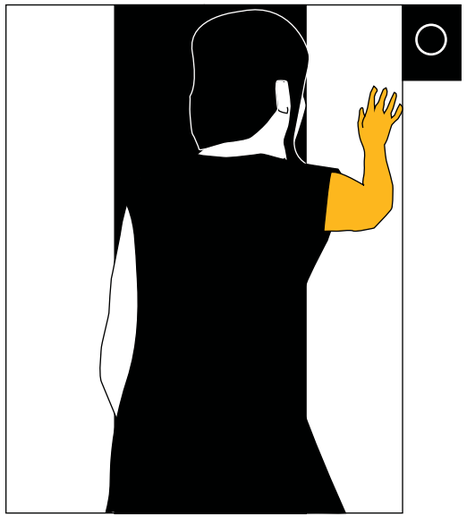
[4]Greenfield, A. Everyware: The Dawning Age of Ubiquitous Computing, New Riders Press, 2006



PERSONAL TACTICS

4 WAVING AT SENSORS

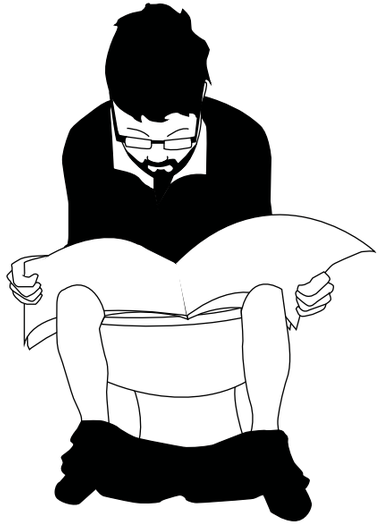




Worthy of note, toilets are one of the most important locus of innovation when it comes to sensors. In this particular context, they are generally used for light-control (room or tank), flush-activation and some “smart toilet” projects already aims at remote health checks based on “constituents analysis”; not to mention soap dispensers and water taps. This packed presence evidently leads to unexpected situations, and the need for users to adopt new kinds of behavior in response.

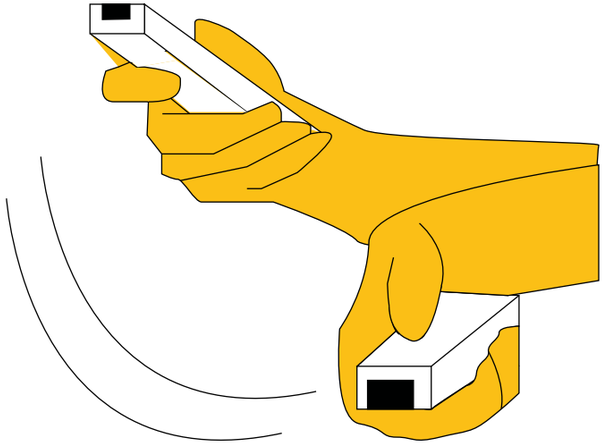
Toilets outfitted with motion sensors detect user presence and could self-adjust light level accordingly. When no motion happens for some time, the light turns off. This is obviously a problem for people who are still sitting in a stall. A standard response, now a common ritual in modern bathroom, consists of waving one’s arms above the head, since the sensor is often positioned to detect upright users.

Sensors and gestures associated with their activation are daily rituals of the new Century. And though people adopt to the new technology faster than we think, there is definitely room for improvement in design. A more user-centered way to approach this would be to understand the wide diversity of behaviors in such places and inject more flexibility into the system.



PERSONAL TACTICS

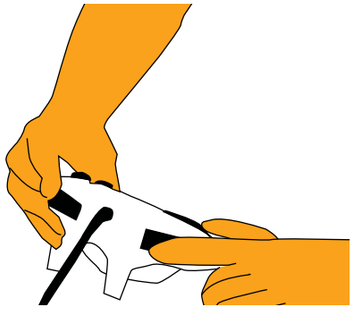
4 SENSOR TRICKING



"Stick waggle" is a gesture often associated with the Nintendo Wii or Sony Move. The waggle consists in waving or shaking a gestural interface at random. This gestural excess is often encountered in bad video games in which players can generally win with no finesse or skill, frantically gesticulating to move onscreen objects and characters. To some extent, waggle is the equivalent to "button mashing", which describes any gameplay wherein skill is an aside to how fast a player can hit the buttons on standard game controllers.

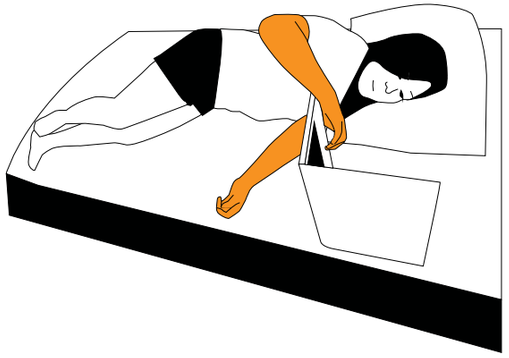
Waggle actually corresponds to anything other than true one-to-one motion detection, and is criticized by hardcore gamers as it doesn't really add to gameplay. Generally a digital (on/off reaction) rather than an analog setup (degrees of reaction), the waggle does not take into account three-dimensional space. Often mocked as a gimmick to achieve cosmetic immersion, it is motion for the sake of motion, when a button or a stick would serve the same purpose. Waggle is sometimes implemented in games for casual and less skillful players who do not have time to learn the gestures necessary to activate an action with the sensors. Most of the time it is a symptom of bad game design.

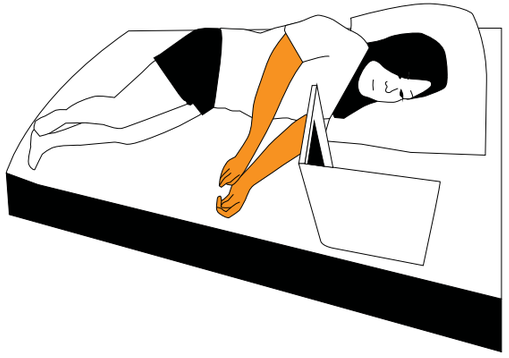
The design solution to stick waggling is simple: a single press button. This example reminds us that the release of a new technology should not imply its compulsory adoption. Designers need to balance technological innovations with user experience, expectation, and context.



PERSONAL TACTICS

4 LAZY VIEWER



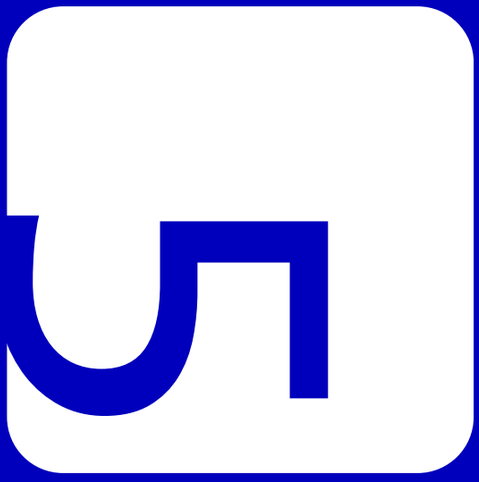


The "Lazy viewer" is a creative set of postures people adopt with digital technologies when lying in bed or slumped on a sofa. A common one, often referred to as "rotilt," entails using a laptop sideways. This posture seems the best solution to watch films, YouTube videos and non-interactive computer programs. Such behavior predates the presence of accelerometers in digital devices, which now allow to automatically rotate content to the user's posture.

The "laptop immersion posture" is a variation to the previous example. It corresponds to using the laptop in bed with its screen in close proximity to the user's face, in order to achieve an intimate digital experience. Generally used for film viewing, it might be seen as the equivalent of reading under a blanket with a pocket light, creating a controlled and amplified illusion of immersion. How do we take advantage of this habit from a design perspective? Designer Joe Malia explored this topic in a project called "Designs for the Computer Obsessive,"[5] a completely soundproof "computer hood" made of black lycra held it to the a computer monitor in order to facilitate an amplified engagement between user and her screen.

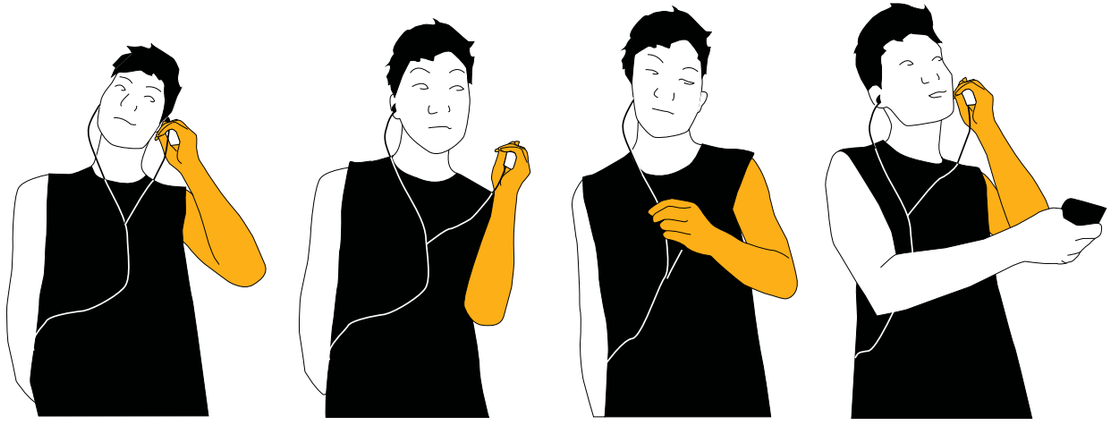
[5]Project presented at the following URL: http://www.design-interactions.rca.ac.uk/joe-malia/design-computer-obsessive

RENEWED SOCIAL INTERACTIONS



RENEWED SOCIAL INTERACTIONS

5 HALFWAY COURTESY



Halfway Courtesy appeared around the same time earbuds became popular. This gesture refers to the removal of one of the two earbuds when a brief but unexpected encounter requires the user to be polite and attentive. It often happens in public transport when officials ask for tickets, or at a shop counter. Removing one's earbud looks as if the user is saying, "I'm in my personal sphere occupied with my background activities, but I owe you the courtesy of being partly engaged with you in a social interaction." As remarked by Michael Bull, a researcher in Media and Film Studies[6], this behavior sends a strong message about how interested one is in what is being said and it is as if the speaker paid a compliment to the other party. However, this courtesy is only "halfway" as the speaker still have an earbud in the other ear.

What are the design implications for this? Again, the present cases highlight user creativity in adopting technology. Beyond that, it also shows that we could potentially design more courteous digital apparatuses, with quick break functions for easy removal.

[6]Bull, M. Sounding out the city: Personal stereos and the management of everyday life. Oxford: Berg, 2000

RENEWED SOCIAL INTERACTIONS

5 SOCIAL DIGITAL MIMICRY

Group situations, although social moments by definition, offer various opportunities to be turned into an awkward individual game involving digital artifacts such as cell-phones, tablets and laptops. A common example consists in a group of people sitting and chatting at a table in a restaurant. If, at a certain point in time, a user fishes out his cell-phone, the others present often start checking their own emails, Twitter updates or Facebook notifications. Social imitation appears to be the driving force in this "alone together" scenario[7].

The first person using his smartphone indeed acts as an indicator that group pressure has been released and that each participant can now whip out their digital devices.

Such situation does not necessarily reflect an asocial use of technology. Instead, it highlights how human interactions are increasingly complex, with a new balance between individual and group activities, as well as the involvement of distant persons in co-present settings and the constant checking of near-past interactions (using digital services such as Twitter).

Designers can of course benefit from this sort of social dynamic by enforcing such individual behavior in group settings. A more interesting avenue though, might be to design products, such as tables or chairs, and digital services that can bring back individual activities at the group level.

[7] Turkle, S. Alone Together: Why We Expect More from Technology and Less from Each Other, Basic Books, 2011

RENEWED SOCIAL INTERACTIONS

5 CONVERSATION GENERATOR

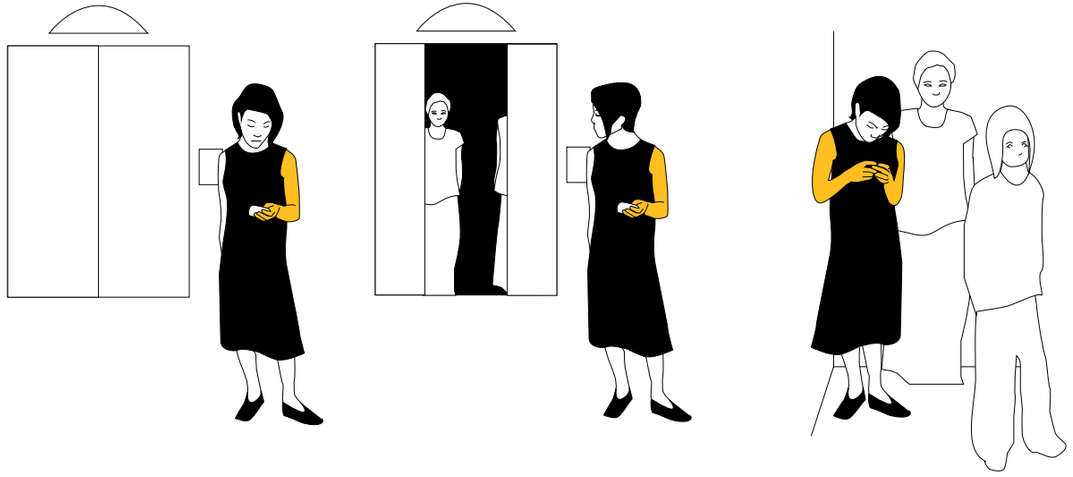
The evolution of cell phones, with the ever increasing addition of new features, turned this device into a resourceful object that can be deployed in lots of occasions. Beyond placing phone calls, browsing the web and playing video games, the content displayed on the phone is often used as a way to start and/or fuel a conversation. This happens in various social contexts ranging from dinner table conversations to a casual chat with strangers in the bus. We actually even saw a painter in a tourist spot using the image represented on the screen to spice up the portrait he was doing of an enthusiastic smartphone user.

Such a habit is interesting given that it shows how cell phone usage is a social activity. It not only occurs with distant people through calls, texting and social media apps, but also happens with nearby persons. Such interactions, mediated by the phone held in different postures, can be seen as evidence of a sharing impulse felt by users. For some, especially shy teenagers, what's displayed on the phone could potentially act as an icebreaker to start a conversation. For others, it's simply because the phone has be turned into a device registering souvenirs through pictures, or social interactions through SMS, tweets or emails. To some extent, this behavior is close to situations in which people talk about what they just heard on the radio or on TV. However, in the phone scenario, the elements gathered on the display could be personal (a picture taken in the morning), less long and continuous (an SMS), and, above all, "curated" by the user who chose to select it.

Some designers noticed that and created interactive coffee tables allowing people to share such bits and pieces. But isn't that a narrow way to build upon this habit? One can think about other possibilities such as using other people's reactions to augment the content presented at first. What would be a Tumblr post enriched with the discussion people had about it over lunch?

RENEWED SOCIAL INTERACTIONS

5 PRELOADING

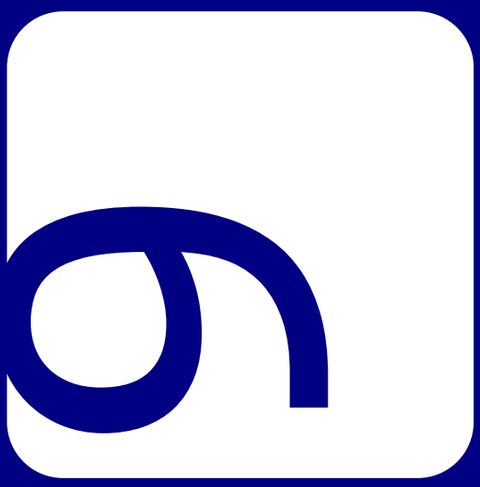


Despite the pervasiveness of network presence in the Western world, dead spots still exist. Think about elevators, canyons walks or a short trip abroad without any data plan. These places are interesting because they disrupt our digital interaction, which more or less relies on permanent network connectivity. Over time, users learn that they wouldn't be able to browse the web in an elevators, or downloading a map during a hike in the mountains. One of the strategy to avoid that is to anticipate.

A common scenario case we've encountered consisted in the way people preload some content on their smartphone before entering an elevator. Twitter updates, Tumblr micro-blog posts and Facebook statuses are quickly transferred so users, "alone together" could potentially avoid any social awkwardness.

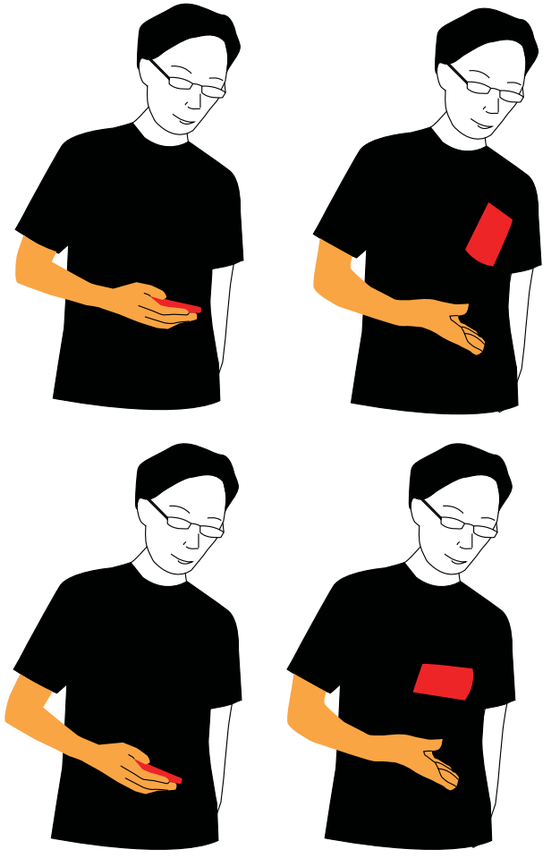
From a technical perspective, such habit prefigures upcoming solutions that will enable users to carry more and more information with them "locally" (i.e. on their phone), a sort of frozen version of their "personal and social cloud" that are accessible/downloadable even when the network is not accessible.

VENTING
SPECTRUM



VENTING SPECTRUM

NERVOUS TICS



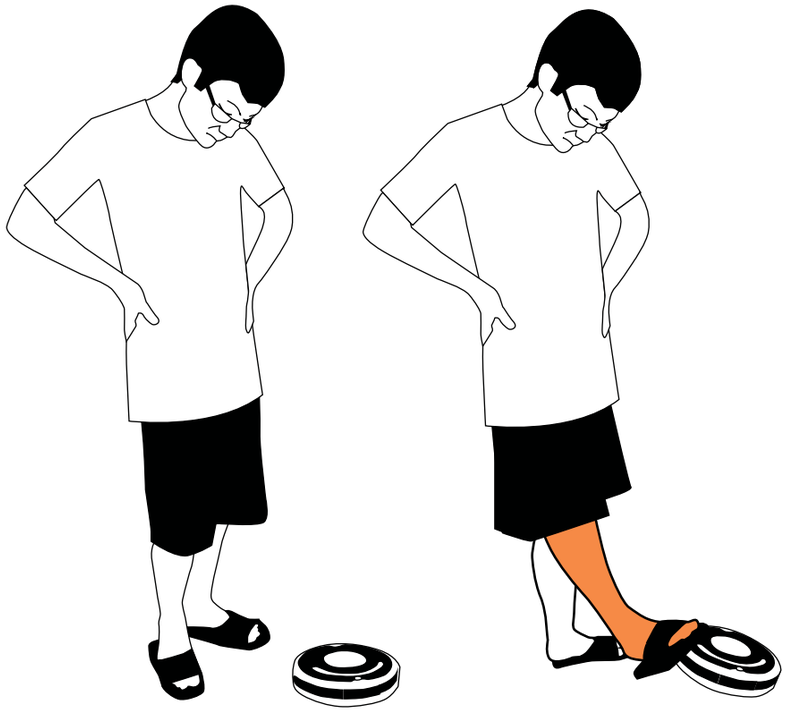
We all have nervous habits involving playing with objects at hand: hair twirling, finger tapping, nail biting, pen flicking are common examples. In the digital age, where a device is often near at hand, a whole vocabulary of gestures have appeared: spinning the smartphone on a flat surface, flipping it in the hand, flipping in the air (which inevitably account for a small portion of cracked screens), straightening the phone on the tabletop exactly lined up with whatever is on the table, etc. This range of possibilities partly appeared because of the evolution of phones form factors. As Donald Norman, a prominent researcher in the field of human-computer interaction, has put it, the "affordance"[8] of the artifact suggest action possibilities readily perceivable by the user. To some extent, the flat appearance of the iPhone allows people to spin it on a table, and the small size of clamshell phones enable teenagers to flip them in the air, which was certainly not possible with the bulky portable phones from the beginning of the nineties. Such affordances are less direct than a button inviting to be pressed, but they certainly play a role in how users creatively repurpose their devices to release their stress.

This ordinary behavior leads us to wonder if designers have already thought about the nervous tics deployed by users of their future products. What would such an exploration mean from a creative perspective? To what extent such knowledge can be feed back into the design process?

[8]Donald A. Norman, Affordances, Conventions and Design. Interactions 6(3):38-43, May 1999, ACM Press

VENTING SPECTRUM

VIOLENT RIPOSTE

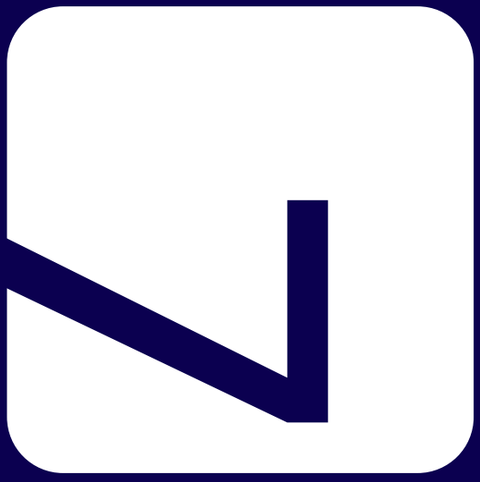


Anger with technology often results in punching or kicking, even though these physical reactions may appear a bit extreme at first glance. In our daily life, the most ordinary example of such “violent riposte” often involves vending machines that refuse to cooperate. Bills rejected from slot, coins refused, products jammed somewhere in the conduit... these are problems we encounter routinely. If some users let it fly and accept this as a fact of life, others react quite violently, especially when no one’s watching. Kicking a machine here feels like a restorative way to release some steam and vent one’s rage.

This habit is now taking place with owners of robots such as vacuum cleaners. A violent riposte may indeed happen when the device does not behave as expected, or when a technical problem is encountered. Some of us might find human machine violence repulsive. For example, we might find it uncomfortable to watch an owner kick his Roomba. On second thought, such behavior recalls people’s reaction to vending machines and may really be a transferred behavior.

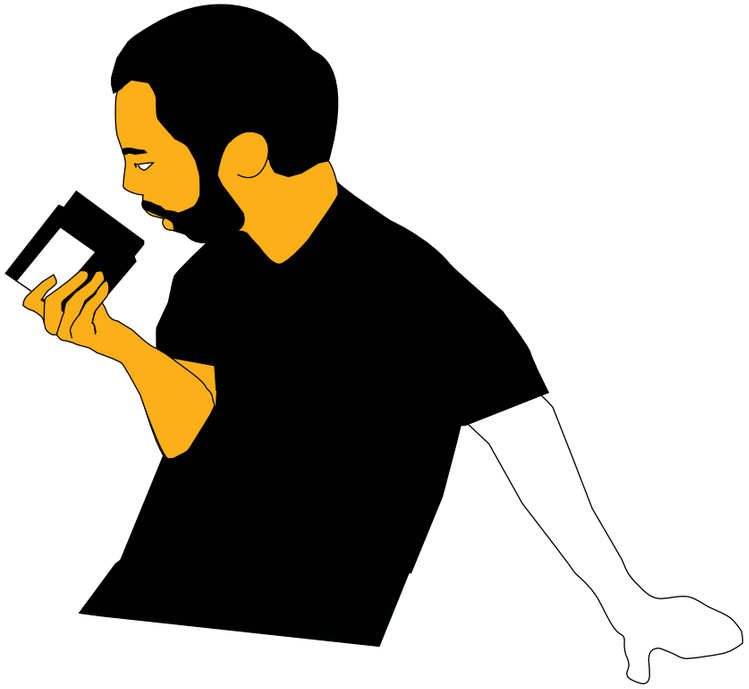
Now that technical objects have a programmed behavior, their rejection or indifference to our presence could lead to “rage against the machine.” This new relationship seems to call for better design reminding people to be gentle with their robots or machines. Crafting better feedback behavior and more adapted error messages from machines are definitely good candidates for that matter.

DIGITAL
PLUMBING



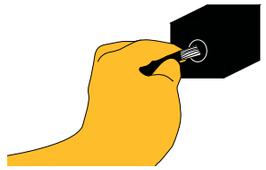
DIGITAL PLUMBING

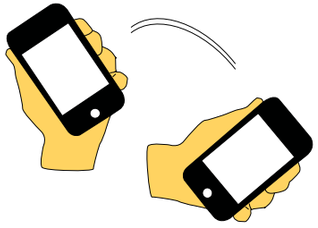
7 QUICK FIX



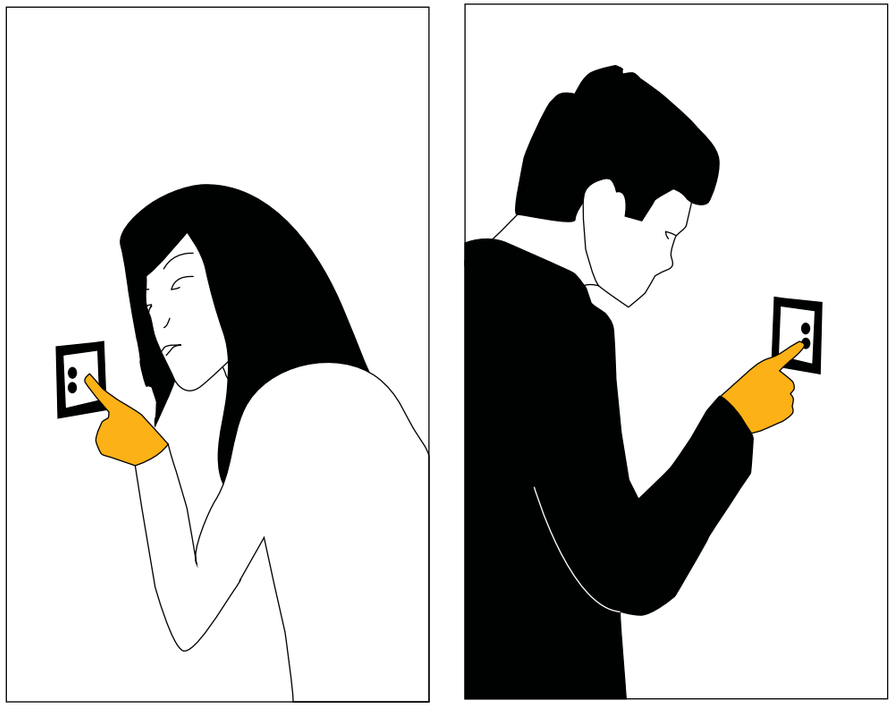
The reasons why a technological device may not work are very diverse; certainly as broad as the way users try to figure out what to do when breakdowns occur. When a problem just happens, people tend to try easy repair strategies: whacking a game controller, punching a screen, shaking a smartphone, jiggling wires, or hitting a remote control on something.

Sometimes, these tricks can be more elaborate; for instance, battery removal when a device has become unresponsive. The annoying synchronization of home automation systems is also a good example as it may require members of a family to simultaneously press buttons while being in different rooms, leading to a weird ballet with screams and misunderstandings. Also, quick fixes can be very personal and intimate, as attested by gamers back in the days, who blew on video-game cartridges (or even lick them) to remove the annoying presence of dust.





These gestural tactics are interesting because they reveal a part of the domestication process that occur when people appropriate technological objects. These repair habits are shaped by users' perception of what went wrong, the potential causes of the problem(s) encountered, and where to act upon their devices. Given that most of our digital apparatuses look like black boxes with less and less points of entries (apart from its touchscreen, an iPhone only has 5 buttons), the owner does whatever she can to find potential solutions. The whacking/jiggling/hitting often appears as the simplest way to make something work again. Such behavior definitely calls for a closer attention to repair practices and how to clue users in at fixing hardware.

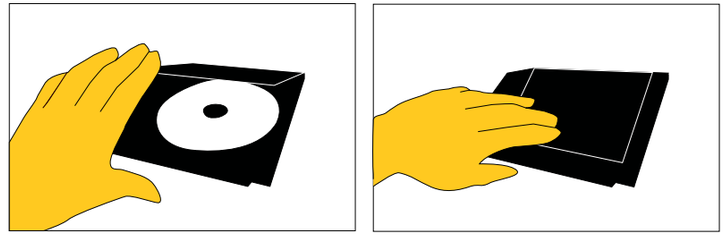


DIGITAL PLUMBING

7 OBSESSIVE FIX

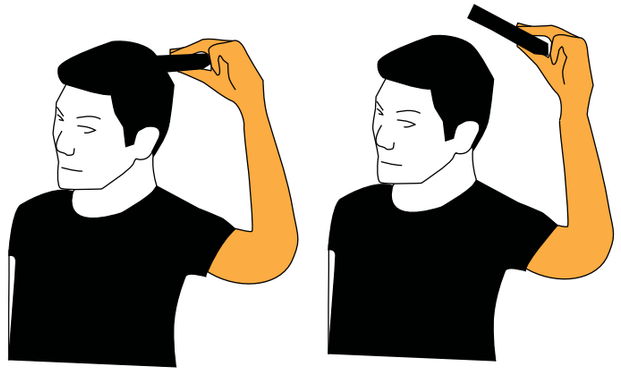
Another important repair strategy relies on the obsessive character of certain users. Perhaps because they are annoyed by the breakdown of their digital hardware, or perhaps they are inherently impatient, some people adopt a frenetic behavior when trying to solve the problem at hand. In our observations, we even encountered an informant who told us he had to quickly open and close the DVD lid of his Playstation almost a hundred times. Such behavior echoes the compulsive hitting of Control Alt Del by certain PC users.

In such cases, the repetition in a short amount of time seems to act both as a fixing strategy and a way to vent one's anger. And of course, it might eventually work.



DIGITAL PLUMBING

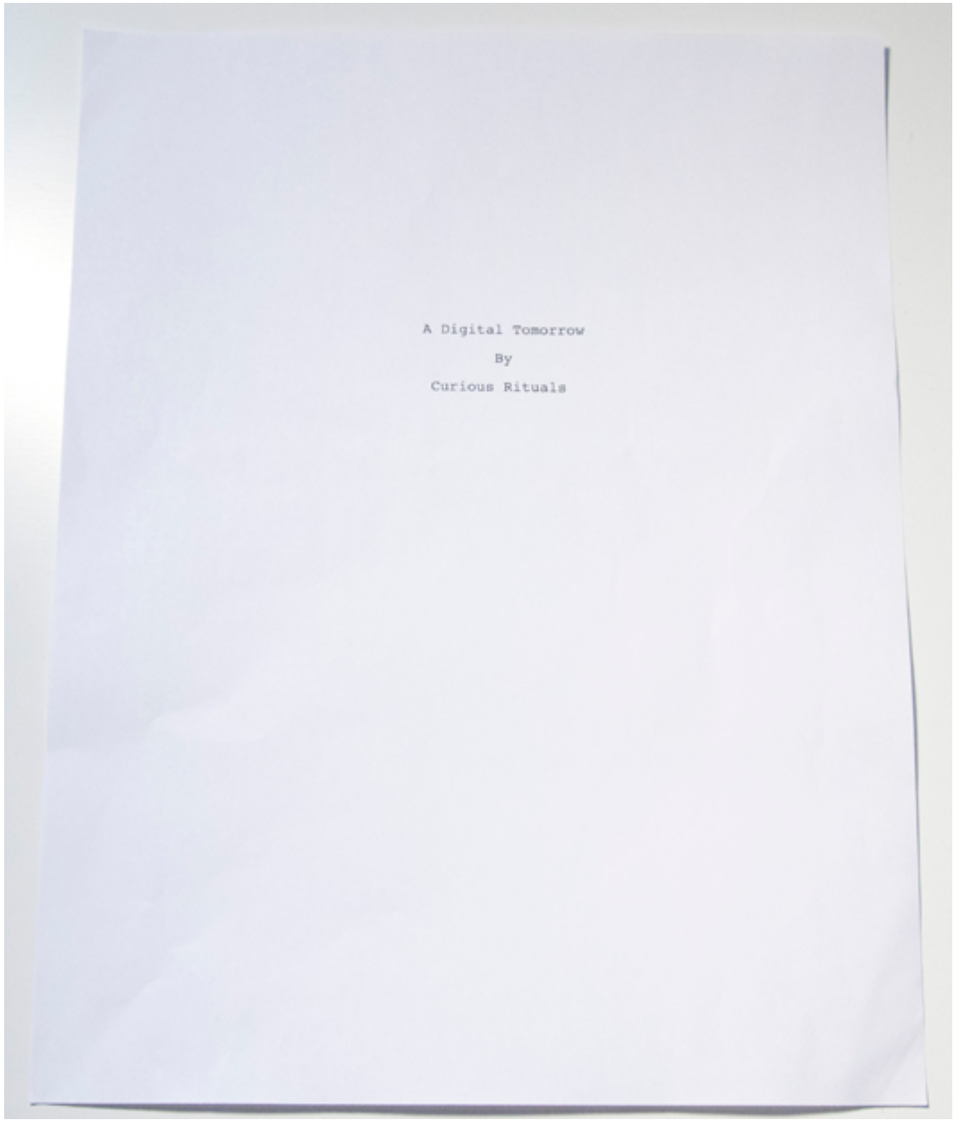
NAÏVE FIX



Gestures and postures employed to fix machines also reveal the naïve understanding people have about their technological objects. Based on the defective objects at hand, the strategies adopted by users can be very broad. In our field observations, one particular user would raise his finger above his head in order to have a better network connection when using his cell phone in his apartment. Such attitude is highly similar to what radio and TV owners used to try out when the pre-digital signal seemed shaky: they would move around in the room or try to sit in specific places in order not to interrupt the flow of electromagnetic wave. We have also come across users who tap their phones or remote controls on their heads when devices fail to work properly.

Are these placebo gestures, naïve behaviors on the users' part? Or do they really work? The answers seem less important than an understanding of why users do what they do. From a design perspective, they remind us the user appropriation process relies a great deal on attributing behavior to objects. For users, the right solution is dependent on material affordance and feedback.

2 GESTURES OF TOMORROW


A Digital Tomorrow
By
Curious Rituals

INT. BEDROOM

Phoebe is in her bedroom. She is laying on her bed wearing AR glasses. A faint sound of a program she is watching can be heard.

She takes off glasses and hovers them over her head while the ads go on between the program she is watching. When the ad is over she puts her glasses back on.

We can hear the program she is watching is comedic, Phoebe smiles in reaction to the show.

Another ad goes on, she takes the glasses off once more and while doing so, she checks the time on her watch. She looks at her bag of dirty laundry and pauses. She gets up and heads out with the dirty laundry.

EXT. DRIVEWAY

Phoebe walks towards her car carrying a laundry bag. She places her palm against the driver's side window to unlock the car. There is no response. She drops her bags and thoroughly makes the same gesture with her palm and car door opens.

She unlocks the trunk by pushing a button in the front, walks around back and puts her things in the trunk.

She steps into the drivers seat and looks into the rear view mirror to start the engine, there is no response. Pauses for a moment. She adjusts the rear view mirror to face away from her.

Phoebe begins to apply some make up. Slightly darkening her eyebrows and applying some lipstick and blush. Once she finishes she re-adjusts the rear view mirror and stares into it, trying to keep as still as possible.

The engine finally begins running. She drives into the street.

EXT. LAUNDROMAT

Phoebe parks in front of the laundromat. She opens the trunk, takes out the laundry bag to drop off.

Phoebe returns to the car, she places her palm against the driver's side window to unlock the vehicle. She steps into the car and looks into the rear view mirror to start the engine. The engine does not start. She lightly reapplies her

make up and looks back into the rear view mirror. The engine begins and she drives off.

INT. INSIDE DRIVING CAR

A sound alerts a missed call from a friend named Gerardo. Phoebe looks to see who called. She calls out the friend's name repeatedly, finally calling it out in a slightly odd pronunciation and tone.

PHEOBE
Call "Herardo." Call "HE-RAAR-DO."
Call "GEER-AIR-DOO."

The phone rings, friend answers.

PHOEBE
Hey Gerardo. Did you call?

GERARDO
Yeah, are we still on for coffee?

PHOEBE
Oh. Okay yeah, I will...be there.

GERARDO
Okay, I'm running a little late but will be there by noon.

PHOEBE
Ok.

GERARDO
Where ar--

Phoebe accidentally gestures to hang up phone. She calls out friend's name again in the slightly odd pronunciation and tone.

PHOEBE
Hey, I'm sorry about that...I accidentally hung up.

GERARDO
That's fine--so we are meeting at Highland Park?

PHOEBE
Okay cool, I'll be there in about half an hour?

Phoebe repeats gesture to hang up.

INT. BEDROOM

Phoebe walks into her room, looks inside her closet. She closes it and turns to a wall that has a virtual closet built in. (We only see her reaction to the virtual closet).

Phoebe adjusts to a posture in order to test outfits. She tip-toes to test various heights of heels. She tilts her head awkwardly to adjust to the image of the glitch-y virtual closet.

She continuously swipes (or waves hand) to try on different outfits, responds to some. We can hear audio interactions.

VIRTUAL CLOSET
Perfect for that job interview.

Phoebe smacks the side of the closet. She readjusts her posture and swipes.

VIRTUAL CLOSET
Perfect for a sunny afternoon.

Phoebe walks out wearing her outfit.

EXT. CAFE/PUBLIC SPACE

Phoebe meets her friend Gerardo at a cafe.

They greet one another.

PHOEBE
Hi!

GERARDO
Hey, good to see you.

Gerardo brings out a stack of papers and starts to discuss a project he is developing.

PHOEBE
You, too. So, show me what you've been working on.

GERARDO
So...it's going to be a collection of short stories that I want to publish into a bi-monthly journal. I've got around 10 people who are contributing for the first one. Each journal will have some sort of really general theme--power, hunger, dream, shame, etc...

(CONTINUED)

They are drinking coffee. Phoebe puts on her AR glasses. She appears to be looking at Gerardo talking about a project he wants to do, but instead is looking to the side, where there is a cute dog scurrying by.

Gerardo is fidgeting with his cell phone, the screen is blinking: *Low Battery*

He begins to gesture circles with his phone in hand in order to recharge energy. Phoebe notices Gerardo doing this and looks at her AR glasses, noticing low-battery as well. She begins shaking her AR glasses to recharge.

A wide shot of the two gesturing to recharge their devices.

Cut to both leaving the cafe, waving.

EXT. YORK BLVD/IN FRONT OF CAFE

Gerardo is walking away from the cafe. He is trying to remember all of the brainstorming he did during his coffee with Phoebe. He reaches out the brain interface in his backpack to synchronize his brainstorming into his phone.

Gerardo places the brain interface on his head, he stares off, blank expression. He pinches himself to focus, but is distracted by his surroundings.

Gerardo checks his phone for accurate recordings. The recordings are off and spotty. He shakes his phone and hits it.

Frustrated, Gerardo runs back into the cafe and walks towards the restroom.

Gerardo walks into the restroom. There is a faint sound of brainstorming audio synchronizing. Gerardo checks his phone and we can see the text accruing.

Outside the restroom door, a line of people waiting also to use their brain interfaces in private. A man knocks and interrupts him.

GERARDO
Syncing!

INCIDENT REPORT 4728A/Y

MARKED: HD CONFIDENTIAL

TO: @scrappycarmalitallp, Knight-Reese Innovations, General Counsel

FROM: @dramaops Knight-Reese Innovations, BabyBoo Division, Director of Operations

FROM: @grogenehero Knight-Reese Innovations, BabyBoo Division, Director of Technology

FROM: @muhatukitykatprrrr Knight-Reese Innovations, VP Proactive Response Division

SUBJECT: Baby Bjorn Bot™ Failure Mode Analysis

SUMMARY: Based on inquiries from the Office of the Home Secretary of Consumer Analytics and inquiries through FAQ comment swarms, reports in the general news and reports from our call centers it is our determination that the Baby Bjorn Boa Bot™ product has in fact experienced consistent failures in several aspects. These failures can be attributed less conclusively to particular configurations of geneware in the swaddling blanket's gesture recognition system. In laboratory analysis, the gesture recog system can at times incorrectly determines the sleep state of the subject (child) enclosed in the Baby Bjorn Boa Bot™.

ANALYSIS: Genotechsys is our sole source supplier of the swaddling blanket subsystem for the Baby Bjorn Boa Bot™. Their swaddling subsystems operate in coordination with the NatureFeeds™ drip-feed micro synthetic goat udder which has an independent gesture recog system that responds independently to the suckling gestures of the ensconced subject baby. In certain circumstances the NatureFeeds™ drip-feed over-produces in excess of 37 milliliters per second resulting in effectively saturating the swaddling blanket thereby inducing a systemic malfunction. Parenthetically, this volume of over-production is a potential choking/drowning hazard.

In 98% of failure cases reported (312 incidents) or the 100% failure cases conducted in the laboratory (15 trials), malfunction has been identified as an over-reactive swaddling behavior reacting at a period of between 3-27 constriction-release cycles per second. This is considered unusually high and aggressive cuddling by the bio-blanket in the bot and is inconsistent with nominal reaction behaviors from the muscle-active fibers used in the blanket material. It's completely out of band and was never observed either in the exotic precursor B. constrictor or any known derived or refactored synthetic geneware.

These constriction fibers were Genotechsys sourced between 3/2014-12/2014 and have been confirmed as the material used to weave the blankets used in the Baby Bjorn Boa Bot™ from our factories at the Mogodishu cooperative. Samples returned for analysis are definitive in the purity of the behavior-attribute strands of exotic-Boidae (spec Boa Constrictor exotic precursor for sourced geneware) derived genetic material (tradename GenoBoaStrictor™). Therefore, the source fibers for the blankets are likely to be the main source of failure.

N.B. The 3/2014-12/2014 GenoBoaStrictor™ source fibers and have been

represented as ISO9001 and USDA Technorganic compliant by Genotechsys. Genotechsys has thus far been unwilling to contribute to the failure mode analysis and is unlikely to go on the record on this matter. This is almost certainly due to the off-shore (likely Finnish or Thai) source material they use for precursing the muscle-active genetic firmware.

EXPOSURE: Thus far the extent of corporate exposure on this and related incidents has been limited to negative trade rumor swarming and some chatter in social pits that has yet to reach levels of consequence.

But note, attention is beginning to focus on the matter. [REDACTED] from the [REDACTED] reported in a follow-up to a consumer-facing product review of [REDACTED] and the Baby Bjorn Boa Bot™ that some consumers have reported intermittent "uncannily reptilian slithering behavior" during idle states just after the Baby Bjorn Boa Bot™ has been in the sun and thence moved to a shaded or cool environment. Of most concern has been this "slithering behavior" occuring when small animals such as housepets (either engineered or exotics) walk nearby the Baby Bjorn Boa Bot™ product. The behavior likely fires selectors on the housepets' gesture recognition geneware resulting in an infinite fight-or-flight loop by both products. Only a forced almond-soy rub induces a core dump and hard reset. (Note: This would be consistent to the autonomous reactions of the most troublesome of the MiniBeeFollowMe™ product line. Specifically the FollowDrone™ Runner's Mate Child Stroller and GoPro SeeMeAlways VideoDrone™ continue to lose track and run or fly away when in close proximity to incompletely coded flowering mountain synthetics especially when their coloration codes resemble closely their exotic precursor flowers, cf INCIDENT REPORTS 4629-T/R and 2897-T/R.)

Engineering determines it is likely that, as occured with the aforementioned

MiniBeeFollowMe™ products, the gesture recognition sensebuds on the exterior surface of the Baby Bjorn Boa Bot™ are expressing attributes of nominal pre-engineered prey-reaction behaviors that should have coded out during the exotic mode refactoring. Symbolicating core dumps and crash logs have only revealed obfuscated hex pointers to *code that our engineering teams cannot identify as theirs*. This is particularly concerning. Put simply: It appears that the gesture recognition methods have mutated or rewritten themselves insitu.

Liability and financial exposure to this failure is growing in significance. Class actions are likely to develop as a consequence of 74 (as of 2/April/2015) pending legal actions.

RECOMMENDATIONS: Customer-facing recommendations entail a standard rewrite of the customer service script for agents responding to incidents in this category. We would recommend transfering these incident reports and all inquiries related to it to our Duluth-based AgriGen division which will be better able to respond (either with mercenary remediation proactives or less invasive protocols) to specific technical issues that customers may have, specifically about the protocol for almond-soy induced hard resets should normal release procedures prove ineffective.

Additionally, engineering resources have identified two possible rewrites of the genetic precursors that will produce a less reactive goat-soy milk from the NatureFeeds™ drip-feeder that will cause no reaction from the GenoBoaStrictor™ material. That solution, though, may introduce more behaviorial, repro, and gesture recognition code mutation anomolies as yet unknown.

The second solution is a refactoring of the geneware that produce the gesture sensing buds in the bio-blanket itself. Such a refactoring would be designed to produce a more accurate gesture recognition of sleep state versus feeding state. This second solution would require current owners to download a geneware update and quick-grow the patch at home. The patch can be applied to the bio-blanket by the customer themselves with, for example, our BioSoftSkin™ laminating adhesive or taken to a local genestress who can easily conduct the grafting procedure. Such could be completed at modest cost, approximately $125USD per unit, and should be considered COB expense and write-down to be reported this Q1 2016 if the remediation actions described are enacted.

CC: @paolobacigalupi, @greatdismal, @bruces, @doctorow
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Julian Bleecker
WikiLeaks®™ LLC, Nuku’alofa, Tonga 015

B-SIDE FUTURES

The curious habits described in this book can be seen as ingredients with which technological objects are domesticated by people, integrated into their own daily routines. Fixing strategies, nervous tics, device juggling or courtesy postures, to name just a few, are not only peculiar interaction habits, they reveal how people normalize so-called “futuristic technologies” or what seemed magical and complex at first. They highlight the ingenuity users employ to repurpose and adapt digital technologies to their own context. One should see these insights as constant design patterns in the evolution of technological products and services.

Our speculations about the future of digital gestures, either in the form of a text or film, are not just meant to envision the “future” or the evolution of technology. They can also be seen as a “B-side” to future scenarios produced and promoted by high-tech companies. The “curious rituals” are really about the gaps and junctures glossy corporate videos on the “future of technology” do not reveal; possible alternative scenarios where some of these devices could be adopted, mis-used, re-appropriated.

The questions we asked and the possible implications we arrived at on the project, should be relevant to anyone who is interested in envisioning the future. These are starting points, first questions on how technology could be domesticated, repurposed, recycled in interesting ways outside normative technological discourse. In turn, we hope the answers we come across during the project would lead us to alternative paths not yet explored.

ICONS

ENVIRONMENT


Home

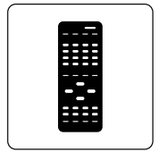

Public / Everywhere

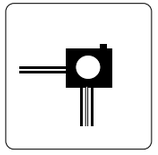

Car

TECHNOLOGY


Smartphone


Mobile phone


Remote


Sensor


Video game controller


Laptop

AREA OF BODY


Full body


Face


Upper body


Arm


Hand


Lower body

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