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User Interfaces as Social Operators

Social Operators

The interactive surfaces of smart phones, tablets, laptop computers and data terminals not only allow users to access and operate networked systems—mere black boxes to most of us—they also dictate how we are *not* allowed to operate them, and they deny full access to those who they were not made for. In "its coupling of the processes of holding apart and drawing together, of confining and opening up, of disciplining and enabling," the interface, as Branden Hookway recently defined it, is not simply a zone of mediation between humans and machines; it always excludes as much as it includes, differentiates as much as it mediates, and purifies as much as it translates.[1]

In his late-1990s book *Theory of Society*, Niklas Luhmann describes the production of social difference as a key function to the formation of social systems.[2] According to the German sociologist, the core processes of social differentiation include centralization and peripheralization, segmentation and stratification, inclusion and exclusion. By performing these processes, or at least by being an active part of them, the user interface becomes what I call a 'social operator.' it compares and differentiates its 'operands,' like an operator in the mathematical sense, which has the ability to add, subtract, divide and multiply. Such a notion corresponds to what Alexander Galloway points out in his book *The Interface Effect*: "Interfaces are not simply objects or boundary points. They are autonomous zones of activity [...] not things, but rather processes that effect a result of whatever kind."[3]

1 Branden Hookway, *Interface* (Cambridge, MA and London: MIT Press), 4.

2 Niklas Luhmann, *Theory of Society Vol. 2* (Redwood City, CA: Stanford University Press).

3 Alexander R. Galloway, *The Interface Effect* (Cambridge, UK and Malden, MA: Polity Press), vii.

Every user interface performs different and sometimes multiple kinds of social operations. Each of those operations necessarily includes and therefore excludes a potential 'operand.' For instance, if the interface of a web platform cannot be accessed by the visually impaired because it is incompatible with screen reading software, it performs social exclusion. Furthermore, if web accessibility is abandoned in order to save time and money, the web interface also performs social segmentation in accord with profitability. While newly emerging mobile recruiting interfaces—already in use by a range of large corporations—accelerate and simplify job seeking processes, they bear the danger of segmenting and stratifying job markets in favor of specific groups of age, income and education. Simultaneously, they peripheralize those who cannot afford or operate the latest technologies.

But the sociopolitical agency of user interfaces does not only take place on their formal side, e.g. with regard to their financial and technical accessibility: the *contents* of user interfaces are equally capable of performing social operations. For example, video game interfaces that reproduce sexism and misogyny by allowing or even encouraging the player (often as male protagonist) to mistreat female game characters are interfaces that participate in patriarchal social stratification.

Web Accessibility

In the late 1990s the W3C (World Wide Web Consortium) launched the so-called International Web Accessibility Initiative, a compendium of guidelines and manuals for how to make both the consumption and production of web contents accessible for as many people as possible. In the press release from 1997, W3C founder Tim Berners-Lee admonishes the fact that: "Worldwide, there are more than 750 million people with disabilities. As we move towards a highly connected world, it is critical that the Web be usable by anyone, regardless of individual capabilities and disabilities. [...] The W3C is committed to removing accessibility barriers for all people with disabilities—including the deaf, blind, physically challenged, and cognitive or visually impaired. We plan to work aggressively with government, industry, and community leaders to establish and attain Web accessibility goals."[4]

4 "World Wide Web Consortium (W3C) Launches International Web Accessibility Initiative," accessed March 15, 2015, http://www.w3.org/Press/WAI-Launch.html.

Ever since that statement, the WAI has been regularly updating its guidelines for a barrier-free Internet. These include:
a) a definition of the various components of web development and web interaction (i.e. people, browsers, media players, assistive technologies, user agents, content etc.) and how they work together
b) so-called Authoring Tool Accessibility Guidelines, aimed at helping people with disabilities to create web content, and at the same time aimed at helping authors to create web content that is more accessible—the goal of these guidelines being to enable, support, and promote the production of content that conforms to the
c) Web Content Accessibility Guidelines, which explain how to make web content more accessible to people with disabilities.

During an audit commissioned by the United Nations in 2006, 100 leading websites from 20 different nations "with relatively developed Internet infrastructure" were tested for accessibility.[5] Only three of the websites provided basic accessibility: the Spanish government's site, that of the British prime minister and the website of the German chancellor. Over 90% of the other websites, however, failed the test—by not providing text alternatives for images or graphical content, by using code that did not conform to industry web standards, or by using fixed font sizes and therefore preventing easy scaling, for instance. While some of the issues pointed out in the research study—such as providing alternative text for graphic elements—could be easily fixed retroactively, others are deeply inscribed in each site's structure.

As many websites are programmed to be highly responsive to the technical specifications and screen sizes of a wide range of different devices, they often do not conform to WAI's standards, and therefore remain inaccessible for a significant number of human beings. A focus on innovative aesthetics and user experiences often comes at the expense of accessibility. In practice, as New York-based web developer and designer Daniel Brewster points out, "everything's moving so fast that you find yourself just trying to optimize where you can: just make sure that the load isn't insane, or just make sure that semantic elements are being used. [...] You do as little as you can until the thing is out in the world and then you act based on how it's living in the world. [...] That can be a problematic approach in some ways because it definitely privileges

5 "United Nations Global Audit of Web Accessibility," accessed March 15, 2015, http://www.un.org/esa/socdev/enable/gawanomensa.htm.

people who are like you, people who are closest to this single use case that you're building out of."[6]

Mobile Recruiting

A range of large corporations have recently started to offer mobile recruiting, which allows prospective applicants to apply for jobs on-the-go from their smart phones or tablets. The various implementations of mobile recruiting range from a company's job website being simply optimized for mobile devices all the way to web platforms that allow applicants to file an entire job application from their mobile devices. In the latter scenario the impracticability of putting together a CV on a smart phone is often met with so-called CV-parsing, which allows jobs websites to extract the respective data from the applicants' profiles on career websites, such as XING or LinkedIn. This strategy panders to corporations' hopes to better access a younger generation that is online everywhere and all the time, allowing them to gain advantage in the competition by culling the most talented graduates and young professionals.

A survey conducted by Ludwig-Maximilians-University (LMU) of Munich and ABSOLVENTA Jobnet in 2014 under the title "Generation Mobile 2014" shows that 43% of the job seekers had already searched for jobs with their smart phones.[7] While only 13% had actually completed an application with their mobile device, more than 50% said that they would be interested in doing so if the user interfaces were better and the processes more practical. 79% demanded employers to provide career websites that are optimized for mobile devices, while over 60% of the surveyed job seekers claimed that a company that does not offer mobile recruiting appeared less attractive to them. Prof. Dr. Ingo Weller from LMU Munich concludes that "it seems obvious that 'old values' such as accurateness and adhering to formalities are taking a back seat and are being replaced with 'new values' such as speed and flexibility."[8]

6 This quote was taken from a panel discussion in March 2014 with the title "Surface—Interface," which I organized at the MAD Museum of Arts and Design New York in cooperation with the online research platform are.na and the Vilém Flusser Archive Berlin.

7 "Studie: Generation Mobile 2014," accessed March 15, 2015, http://absolventa-downloads.s3.amazonaws.com/files/Jobnet/Whitepaper/jobnet_whitepaper_generation_mobile.pdf.

8 As quoted in Daniel Furth, "Mobile Recruiting: Generation Y steht 'Smartphone bei Fuß'," accessed March 15, 2015, https://www.jobnet.de/news/mobile-recruiting-generation-y.

By targeting specific demographic groups, mobile recruiting may have a stratifying effect on the job market in favor of people of a certain age, income and education. Simultaneously, mobile recruiting not only bears the danger of peripheralizing parts of society that are inclined to stick to the "old values": particularly, those who cannot afford or operate the necessary technologies will be left behind. But also on the corporate end, mobile recruiting may have a stratifying effect, since it is mostly large companies who can afford to provide, maintain and administrate the respective technologies. With 60% of the "Generation Mobile 2014" interviewees considering companies less attractive that do not offer mobile recruiting, the companies who can afford the new technology are given a clear advantage.

Sexist Video Game Interfaces

On her famous blog *Feminist Frequency*, media-critic Anita Sarkeesian regularly publishes video analyses of computer games with sexist or misogynist content, such as games in which female characters are sexually objectified as non-playable sex objects or where the abuse of women by the player is incorporated in the game plot. Throughout a range of YouTube videos with titles like "Damsel in distress" or "Women as background decoration" Sarkeesian discusses numerous video games that contain, as she states, "largely insignificant non-playable female characters whose sexuality or victimhood is exploited as a way to infuse edgy, gritty or racy flavoring into game worlds. These sexually objectified female bodies are designed to function as environmental texture while titillating presumed straight male players. Sometimes they're created to be glorified furniture, but they are frequently programmed as minimally interactive sex objects to be used and abused."[9]

But it is not only the sexist content of a game world that video game players would passively stumble upon. There are various video games where sexist interactions or the abuse of female game characters is incorporated into the user interface. Examples include the iconic 1996 first-person shooter Duke Nukem 3D, which leads its players through strip clubs crowded with enemy aliens and female pole dancers. The game interface provides a button to throw cash at the strippers; alternatively, the pole dancers can be killed, and at some point the player is rewarded with a new weapon for shooting one of the strippers. A

9 "Feminist Frequency," accessed March 15, 2015, http://femfreq.tumblr.com/post/88969688270/in-this-episode-we-explore-the-women-as-background.

more recent example is the popular gangster game Grand Theft Auto (GTA) V. According to Gamespot reviewer Carolyn Petit, the game "has little room for women except to portray them as strippers, prostitutes, long-suffering wives, humorless girlfriends and goofy, new-age feminists we're meant to laugh at."[10] A video, uploaded to YouTube by user MrBossFTW on 17 November 2014, shows a recorded game sequence from GTA V entitled "GTA 5 First Person Prostitute 'Hooking Up'": in the video the player first has sex with the virtual prostitute, and subsequently gets out of the car to shoot her in the head.[11]

The video game industry is "known for its frat boy culture" and dominated by men while "women remain outsiders."[12] However, the opposite is the case regarding the demographics among players. A research study published by the entertainment software association (esa) in 2014 states that today the amount of female versus male players is almost the same.[13] In the U.S. alone over 50% of all households own a video game console, which does not include the millions of people who use their computers and smart phones to regularly play games. Against this backdrop, and considering their billion-dollar industry, the distributed agency of video games and their user interfaces is vaster then ever—as goes for their sociopolitical impact. The fact that the consumer demographic is in this case significantly off-beat with that of the industry, as well as the emerging criticism of the industry status quo, gives hope for improvement. The way a platform is used can ultimately change the way it is made.

Norm and Deviation

Needless to say, for the authors and designers of user interfaces—of web platforms, mobile devices, games—creating an interface comes with a responsibility: to acknowledge the social dimension of the work, and to be aware of its social

10 Carolyn Petit, "City of Angels and Demons," *Gamespot*, September 16, 2013, accessed March 15, 2015, http://www.gamespot.com/reviews/grand-theft-auto-v-review/1900-6414475.

11 "GTA 5 First Person Prostitute 'HookingUp' GTA 5 PS4 Gameplay! (GTA V)," *YouTube*, accessed March 15, 2015, https://www.youtube.com/watch?v=C9–8PJs6ypI.

12 Leah Burrows, "Women remain outsiders in videogame industry," *The Boston Globe*, January 27, 2013, accessed March 15, 2015, http://www.bostonglobe.com/business/2013/01/27/women-remain-outsiders-video-game-industry/275JKqy3rFylT7TxgPmO3K/story.html.

13 According to the study, as of March 2014 48% of video games players in the U.S. were female, and 52% male. See entertainment software association (esa), "Essential facts about the computer and game industry," accessed March 15, 2015, http://www.theesa.com/wp-content/uploads/2014/10/ESA_EF_2014.pdf.

effects. For design schools, creating such an awareness should be part of the education they provide.

In her essay *Print Disability: The co-construction of blindness and reading*, Mara Mills, Assistant Professor of Media, Culture and Communication at New York University, illuminates the historical interrelatedness between the concepts of blindness and reading and how they have changed throughout the previous century.[14] At the instant in which blindness was defined as the inability to read printed matter, reading became a primarily visual activity—and vice versa. Mills presents the example of the audio book, which, following a "logic of exclusion/adaption," was originally invented as a rather cumbersome assistive technology in the days of vinyl.[15] In the second half of the 20th century, however, it conquered mainstream consumer markets, and audio books are now to be found on most people's mp3 players. This example not only shows how an assistive technology can be converted into a huge mainstream success, but more importantly the way that norm and deviation result from one and the same social operation.

While the massive inclusive potential of digital media has hardly been fulfilled today, there will always be room for improving the social effects of user interfaces. And even though the achievement of each new norm co-creates another deviation, it is precisely in the tension field between norm and deviation where major innovation can happen.

References:

Burrows, Leah. "Women remain outsiders in video game industry." *The Boston Globe*, January 27, 2013. Accessed March 15, 2015. http://www.bostonglobe.com/business/2013/01/27/women-remain-outsiders-video-game-industry/275JKqy3rFylT7TxgPmO3K/story.html.

Entertainment software association (esa). "Essential facts about the computer and game industry." Accessed March 15, 2015. http://www.theesa.com/wp-content/uploads/2014/10/ESA_EF_2014.pdf.

Feminist Frequency Blog. "Feminist Frequency." Accessed March 15, 2015. http://femfreq.tumblr.com/post/88969688270/in-this-episode-we-explore-the-women-as-background.

Furth, Daniel. "Mobile Recruiting: Generation Y steht 'Smartphone bei Fuß'." Accessed March 15, 2015. https://www.jobnet.de/news/mobile-recruiting-generation-y.

Galloway, Alexander R. *The Interface Effect*. Cambridge, UK / Malden, MA: Polity Press, vii.

14 Mara Mills, "Print disability. Die Ko-Konstruktion von Blindheit und Lesen," in: *Disability Trouble. Ästhetik und Bildpolitik bei Helen Keller*, ed. Ulrike Bergermann (Berlin: b_books, 2013), 194–204.

15 Ibid., 196.

GTA V. "GTA 5 First Person Prostitute 'Hooking Up' GTA 5 PS4 Gameplay! (GTA V)." *YouTube*. Accessed March 15, 2015. https://www.youtube.com/watch?v=C9–8PJs6ypI.

Hookway, Brendan. *Interface*. Cambridge, MA / London: The MIT Press.

Ludwig-Maximilians-University of Munich / ABSOLVENTAJobnet. "Studie: Generation Mobile 2014." Accessed March 15, 2015. http://absolventa-downloads.s3.amazonaws.com/files/Jobnet/Whitepaper/jobnet_whitepaper_generation_mobile.pdf.

Luhmann, Niklas. *Theory of Society Vol. 2*. Redwood City, CA: Stanford University Press.

Mills, Mara. "*Print disability*. Die Ko-Konstruktion von Blindheit und Lesen." In: *Disability Trouble*. Ästhetik und Bildpolitik *bei Helen Keller*, edited by Ulrike Bergermann, 194–204. Berlin: b_books, 2013.

Petit, Carolyn. "City of Angels and Demons." *Gamespot*, September 16, 2013. Accessed March 15, 2015. http://www.gamespot.com/reviews/grand-theft-auto-v-review/1900–6414475.

United Nations. "United Nations Global Audit of Web Accessibility." Accessed March 15, 2015. http://www.un.org/esa/socdev/enable/gawanomensa.htm.

W3C. "World Wide Web Consortium (W3C) Launches International Web Accessibility Initiative." Accessed March 15, 2015. http://www.w3.org/Press/WAI-Launch.html.

"A composite wound dressing comprising in a layered arrangement, a semi-permeable membrane and a non-stick, self-sealing biodegradable tissue interface, characterised in that said dressing further comprises a permeable reinforcing layer located between the semi-permeable membrane and the biodegradable tissue interface, which layer is formed from an electrically-conductive material."

Title: Composite wound dressing
Inventor: Laszlo Dr. Juhasz
Publication Date: 1988-10-12
Patent No.: EP0099758 B1

FIG. 2.

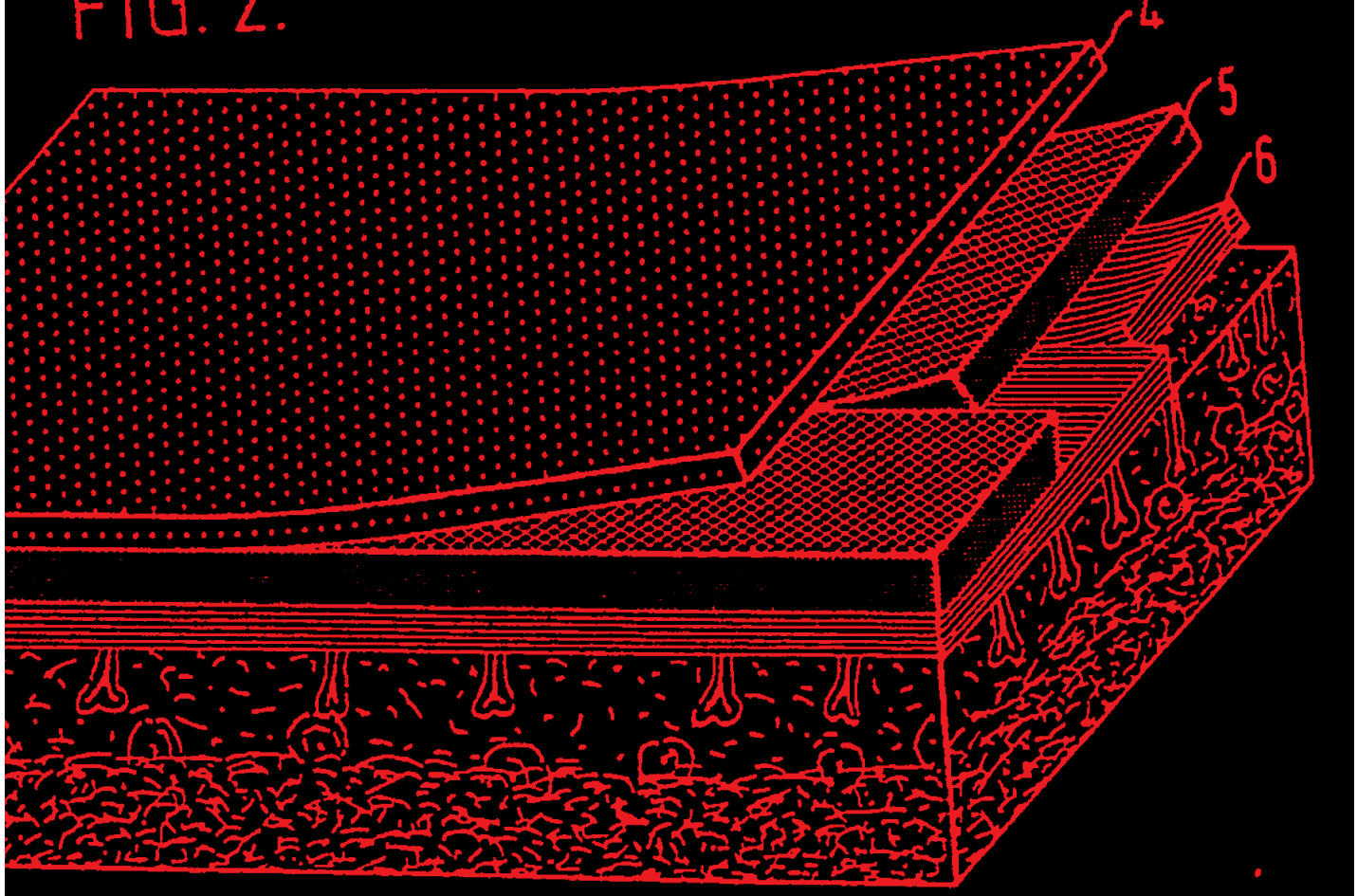

FIG. 3.