Engaged Design and the Practice of Fashion Hacking: The Examples of Giana Gonzalez and Dale Sko

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Abstract

This article draws attention to how hacking, as a mode of practice, can be applied to fashion design processes. Hacking, originating from the world of software programming, features characteristics that could be of essential value when departing on participatory, engaged or sustainable fashion endeavors beyond the modes of production we see common in the industry today. Being networked and collaborative, hacking is a constructive practice rather than subversive and can be a complementary *modus operandi* to the workings of the traditionally hierarchical fashion system. The first part of the article examines the origins

and methods of hacking and their application outside of the computer world. The second part applies these ideas to fashion design and examines two cases: Giana Gonzalez project "Hacking-Couture" and a workshop organized by the author at a shoe factory in Dale, Norway. The article finishes with a short discussion on how fashion hacking can act as a tool for empowerment and cultivation of craftsmanship among people who were once only "passive" consumers.

KEYWORDS: engaged fashion design, fashion hacking, social design, critical design, sustainable fashion

Hacking Methodology

Hacking is a do-it-yourself (DIY) practice of direct intervention, and its application manifests three main characteristics. Firstly, hacking is about the skill of opening a system, accessing it, and learning to master its circuitry, defenses, and structure. Secondly, hacking is a specific tactic of reclaiming and changing a system by plugging into it and redirecting its flows into a more desirable goal, usually by actively building on it, constructing a new improved system. Finally, the methods, techniques, and tools of the hack are shared freely among participants so that anybody can change or develop the new application however they see fit. Open Source, transparency, and free access are words often encountered among hackers. Applications such as Linux and Wikipedia perhaps best reflect the values of decentralization, empowerment, and capacity building that are shared within the community. We will examine these practices and implications further to see how they can be applied to fashion design.

Since the 1960s the term hacking, which originates from the early programming culture at Massachusetts Institute of Technology (MIT), has been usually connected to the world of computers and software. In popular media, the term often connotes an ingenious geek breaking into forbidden networks, bypassing security systems, stealing passwords or copying classified government information. Yet, in computer jargon there is a crucial difference between the curious hacker and his vicious counterpart—the cracker. In media these roles are often confused, but to make this difference clear programming guru Eric Raymond put it simply as: "hackers build things, crackers break them" (Raymond 2001). Hacking is the mastery of a system, often on the edge of trespassing or the unpermitted, but usually not with ill intent.

The constructive and joyful aspect of hacking is quite commonly underlined, not least among hackers themselves, and this stance differs radically to the counterculture approach on protest and sabotage.

According to media theorist William J. Mitchell there is a wide difference between the hackers and the 1968 protests of the Situationists:

> MIT's nerds have never felt the need to frame their jokes and pranks with French-style theoretical apparatus, but they do have a characteristic tactic of their own—the hack. The best hacks are cleverly engineered, site-specific, guerrilla interventions that make a provocative point but aren't destructive or dangerous. Unlike hard-core Situationists, who wanted to provoke genuine outrage, true hackers would never consider stunts like absconding with the severed head of Copenhagen's Little Mermaid. (Mitchell 2005: 118)

Traditionally, a good hacker was a good programmer, solving tricky passages with smart bendings of the existing code, adding new critical parts and improving it to make it do what was intended. Hacking and reusing code was a way to shorten queue times to the computers, but also caught the spirit of curious modifications in which many of the academics were interested. Later, as computers became more commonplace, this practice of sharing also became common in the hobby networks where hardware, programs, and operating systems were collectively built upon.

In computer jargon hacking is usually the activity of making technology work the way one wants by direct intervention, tuning the operations of a machine or device through the conscious "trickery and manipulation of a system" (Cramer 2003). It also implies something more than ordinary or everyday use. According to the technical journalist Steven Levy, "the feat must be imbued with innovation, style and technical virtuosity" (Levy 1994: 23). But hacking can also be used to mean the reclaiming of authorship (or co-authorship) of a technology by supporting transparency and unanticipated use. As mentioned by Mitchell above, hacking is a critical as well as playful activity, circling around a DIY ethos and a desire to amplify our means of interaction with the world. Hackers circumvent unwanted limitations and control systems proposed by the original creators or owners to put new tools in the hands of Everyman.

A hack goes beyond customization, or "pimping," even if it hard to draw a strict borderline between the phenomena. Where customization offers a controlled and limited amount of options for change, hacking is in this sense the "colouring outside the lines." It is modifying something beyond the predefined design field of original intentions and customization parameters. It is about scratching one's own itch, but using unexpected methods. Hacking is to find one's own way, to encourage exploration, putting curiosity into action, but also sharing this for others to build upon. In programmer Richard Stallman words, hacking

is "exploring the limits of what is possible, in a spirit of playful cleverness" (Stallman 2002).

The hackers' deep and practical curiosity into the substrata of code or matter immediately leads to questions concerning the concepts of intentions, ownership, and control. This leaves hacking in the gray zone between idealist politics and direct action, even if practitioners often downplay their political engagement. Serendipity and playfulness are always the main attitudes behind hacking, and always with participation as the key element. What the original authors call trespassing and copyright infringement hackers frame as a rightful liberation and appropriation of everyday culture, as shown in the motto of the DIY magazine *Make*: "if you can't open it, you don't own it" (Jalopy 2005).

It is very hard to draw the boundaries of the hacker culture, but much of the free software, open source, and Linux culture is normally associated with hackers or originating from them. One could also argue that a peer-production project like Wikipedia is based on the core ideas of the hacker movement.

This connection becomes more apparent when addressing the hacker principles of sharing and communal co-authorship as a political current running through the hacker culture. According to the media theorist McKenzie Wark, hacking is "at once an aesthetic and an ethic" and requires cooperation as much as individual skill and inventiveness (Wark 2006: 320). In his book *A Hackers Manifesto* (2004), Wark explores the hacker ethics as an example of a new class struggle. In this struggle, a new ruling class, the Vectorialists, dominates the subjected class of knowledge or information producers, the Hackers. Wark sees similar mechanisms in this contemporary struggle as the ones Marx identified in early industrialism. While hackers want to freely share their culture and works the ruling Vectorialists want to control the means of diffusion, or "vectors," to suppress their ideas and enclose information into controlled property. As Wark puts it: "The ruling class seeks always to control innovation and turn it into its own ends, depriving the hacker of control of her or his creation, and thereby denying the world as a whole the right to manage its own development" (Wark 2004: paragraph 012). From this point of view, hacking is a response to a top-down tendency to close culture by copyrights and obfuscate everyday technologies and tools.

Viewed from the other side of the fence, the hackers Wark sympathizes with are parts of a software "piracy" movement who are mainly concerned with making illegal copies of copyrighted digital material or trespassing into private property. In the world of fashion, copies and counterfeits are nothing new and the gray zone between "inspiration" and "copy" is under constant dispute. But we need not dwell on copying because hacking is not about copying but about building anew. The core element of hacking is the will to create something new and unique from the reverse-engineered and exposed parts—and especially, to help

others to do the same. An identical copy, or something intending to duplicate something else, would not be considered a hack, just a mere copy. A copy adds nothing; it is nothing new, as it is already old.

As discussed above, hacking is a wide practice that involves many layers of ethics and politics, yet there have been attempts to condense it to some central points. Social researcher Anne Galloway illustrates it with the following:

- Access to a technology and knowledge about it ("transparency").
- Empowering users.
- Decentralizing control.
- Creating beauty and exceeding limitations (Galloway 2004).

To these points could also be added: "using the intelligence of many for innovation, and sharing it freely," as the hacker ethic is based on a notion of collaboration and building on existing code. The sharing and distribution of new knowledge is central to the hackers and is often summed up with author Stewart Brand's quote that "information wants to be free" (Brand 1985: 49).

Even though hacking has a connotation of being a "quick and dirty" approach, the opposite is emphasized within the community. Hacking is the classic mastery of skills or craftsmanship, not only in an aesthetic sense but also in the way mathematicians call good work "beautiful" and how a craftsman answers the practical question "how do you make good stuff?" (Graham 2004).

As mentioned in the beginning, a primary feature of hacking is the constructive aspect, as opposed to "cracking." Hacking is the will to improve things by knowledge of their inner workings and a mastery of techniques. To open the black boxes, reverse-engineer the circuitry, and build a new "plug-in" to the system. There is thus a distinct difference from the counterculture movement or other forms of popular protest where the key tactic is to "drop out" of the system, "subvert" it, or make it stop by sabotage. Hacking is not about stopping the machine, but keeping the power on and bending the system into a more desirable direction through hands-on interventions.

Hacking is to offer pieces for others to build with, not to finish something and build walls around it. It is a practice in a mode of constant becoming. This is clearly visible in software programming where one part of the code is the functions, the program code written for the computer, and the other part, equally important among programmers, are the in-line comments to the program code. These are lines for human eyes only, to help a future reader other than the programmer to understand what the code is about. In this way hacking is more about creating common building blocks rather than finished products, like LEGO pieces. In the world of fashion perhaps the equivalent of such LEGO could be APOC—a piece of clothing—the modular clothing pieces of Japanese fashion designers Issey Miyake and Dai Fujuwara, which can be built

into a variety of garments (Evans 2003: 275). Yet what is missing is the central sharing element—to help others build further on the parts.

Circuit Bending and Shopdropping

Outside the world of computers we could look at examples from hardware hacking where used material components are opened and rewired to create new aesthetics. A popular hardware hacking culture is the practice of circuit bending, often nicknamed "the creative art of audio short-circuiting" (Ghazala 2005). Circuit bending is the culture of explorative tinkering with old electronic instruments and music products, turning discarded musical toys and cast-off sound machines into artistically tuned music machines. These hacked toys are bastard inventions between classical musical instruments, electronic noise units, and new aesthetic tools for composition.

Many programmed sounds, beats, drum machines, and even full demos are hidden inside the hardware of electronic instruments, unreachable from the outside keyboards and interfaces. To reach these treasures the bender will have to open the instrument, explore its circuitry, reverse-engineer its functions, and rewire it so that the new sound intensities can be accessed from the outside. Usually benders put new buttons on the instrument shell beside the original keys so as to trigger a wider range of sounds and noises from the rewired circuits.

Inside these old 1980s toy keyboards lay the basics for a whole new way of making music. A new world of music, tones, and noise can be bent out from these discarded toys, and this is something circuit bender Brian Duffy often demonstrates in his live circuit bending performances. In these performances, often before his concert starts, he uses a camera and projector to show the audience how he reverse-engineers, constructs, and prepares his instruments by opening and tuning the circuits in very simple steps. What he does is he actually *liberates* the hidden potential inside and opens up new possibilities for sound generation, but just using the existing hardware. Before the audience's eyes, he releases imprisoned noises and with these lines of flight summons new forms of playful musical experiences. After the show, the audience leaves with glistening eyes, hungry for discarded electronic toys, and fingers itching for the need to break open and play with circuits.

Even though their practice is unconventional, circuit benders do not oppose other forms of music, or try to subvert the classical canon of music. Instead, they try to draw new lines through the musical scores, reveal new tones and noises to make new forms of music by using common technologies in inventive ways. By creatively short-circuiting existing music toys they reveal new multiplicities of music creation, new unpredictable forms of music by opening and hacking the black boxes of old electronic instruments.

Another form of hacking outside the realm of software is shopdropping. Shopdropping is the art of inverted shoplifting aimed to recircuit the "operating system" of shopping. Shopdroppers reverse-engineer commodities and reinsert them into the commodity system: updated, twisted, or mutated to expose new perspectives on consumerism. These activities can cover a range of topics, from commodity critique of economic regimes to proposing alternative systems of retail and social change (Jahn 2005).

An iconic process among shopdroppers is the action of BLO, the Barbie Liberation Organization, where activists in the 1990s bought talking toys, modified them, and then placed them back onto the shelves at Toys R Us just before the Christmas shopping season. The modification itself was quite simple. The activists switched the voice chips in talking Barbie and GI Joe toys from the same brand. After modification the dolls were put back into their original packaging and returned to the shelves in Toys R Us. The only visible trace left on the modified dolls, unseen from the outside, was a sticker urging recipients to "Call your local TV news" (Harold 2007: 81). The Barbie dolls, who once spoke tender sentences like "I love shopping!" and "Will we ever have enough clothes?" were, after the replacement with GI Joe's chips, reciting his brutal words: "Dead men tell no lies!" or "Vengeance is mine!"

The action, which made the TV news headlines, reversed gender-stereotyped messages and highlighted their unrealistic and perhaps dangerous gender clichés. BLO's actions were, according to them, "revealing and correcting" the dolls (Harold 2007: 80). Yet, the action was not aimed at consumerism itself, but at the messages passing through its system. The action was actually good for business, as a BLO member jokingly told a radio station:

> Nobody wants to return [the dolls] ... We think that our program of putting them back on the shelves [benefits] everyone: The storekeepers make money twice, we stimulate the economy, the consumer gets a better product and our message gets heard. (Harold 2007: 80)

Later, BLO also published the toy-surgery instructions on the Internet to facilitate future reverse-toy-surgery interventions for others toy hackers.

Both the examples above are in a sense a form of recycling, as existing materials are used to create new forms and expressions. In this sense, this is nothing new to the world of textiles, where recycling has been an essential component throughout the ages. But circuit benders and shopdroppers want to liberate *more* potentials than those usually accessed by consumers and users. They recircuit the interfaces of commodities and distribute their new skills for others to build upon.

The more artistically pretentious version of recycling in fashion, which has emerged over the last decades as cheap ready-to-wear fashion has become ubiquitous, is often called "deconstruction." We should examine this closer—why and how is fashion hacking something different from recycling and deconstruction?

Deconstruction vs. Fashion Hacking

Do-it-yourself practice and the reuse of old materials has always been a part of clothing. But a specific form of reuse entered *haute couture* in the late 1980s under the term "deconstruction" and this practice has since been a recurring phenomenon in avant-garde fashion over the last decades. The method of reusing old garments into new creations has especially characterized what is considered as conceptual fashion, fashion on the borderline to fine arts. Many exclusive brands have featured recycling in their collections, perhaps most famously in the works of Comme des Garçons, Undercover, Xuly Bet, and especially Maison Martin Margiela.

However, to describe the *haute couture* techniques, by for example Maison Martin Margiela, as simply "reuse" or "recycling" would be an understatement. In the design process of Margiela, the old raw material is augmented into an object of higher status than its original incarnation (Vinken 2005). If these garments are in some way "cycled," they are "upcycled" into *haute couture*. Thanks to the commonly presumed *authenticity* of old garments, this technique also provides a shortcut and a feeling of maintained existential choices, the ultimate proof of a personality, as argued by fashion theorist Alexandra Palmer (Palmer 2005).

Like circuit bending in the example before, deconstruction or upcycling puts the focus on postproduction processes, which could be open to people outside the fashion system, the usually "passive" consumers. Out of the remains from the back of the wardrobe, and with the help of a deconstructivist methodology, they can re-create the old into the new, and still be *in* fashion as they reproduce styles and techniques of the avant-garde. Using existing material and methods from *haute couture*, they can plug into existing fashion by developing their craftsmanship.

It is precisely here that a major difference between hacking and *haute couture* deconstruction becomes apparent. Where the deconstruction among *haute couture* brands remains an in-house enterprise, the hacker culture emphasizes the participation of users and the dissemination of knowledge and techniques. Hackers aim to spread the code and methods through the community and *avoid* becoming a secret laboratory. Fashion hacking would enable fellow amateurs and other laymen to develop and share their skills, and not keep design only to the designers. This collaborative endeavor would be similar to what anthropologist Karen Tranberg Hansen calls the "clothing competence" developed

among second-hand clothing thrifters, the cultivation of sensibility for clothing aesthetics (Tranberg Hansen 2005: 114). Hansen's idea of how consumers cultivate their "clothing competence" is very similar to how I see craftsmanship being refined among fashion hackers.

To grow this competence fashion can be used as a driving force for craft engagement among users who were previously just "passive" consumers. They can choose to renegotiate their usual role as ready-to-wear consumers and instead develop skills and share techniques under organized forms that will bring them closer to understanding the "operating system" of fashion, its materials, processes, and powers, and learn to hack it.

To clarify this hacking perspective in more detail we will investigate the practice of New York-based designer Giana Gonzalez and her workshop series "Hacking-Couture," which to me features essential aspects of fashion hacking.

Giana Gonzalez and "Hacking-Couture"

In Gonzalez' fashion hacking workshops she creates overlaps between deconstruction, upcycling, craftsmanship, and hacking. Her projects exhibit an inquisitive approach to fashion codes, a systematic development of community skills, and an engaging playfulness in fashion. I followed her working process in detail during the *Hackers and Haute Couture Heretics* exhibition I organized at Garanti Gallery in Istanbul, September 2007 (Figure 1).

Gonzalez, having a background in computer programming, labels her fashion projects "Hacking-Couture." In these open workshops, participants reverse-engineer and hack well-known fashion brands. The participants deprogram material and sign systems of famous fashion brands, to open their expressive source code into various forms of charts, maps, and diagrams. The participants track the brand's basic building blocks, or the LEGO parts of how the brand is built. These identified components form the "code" from which a brand and its garments are constructed. This code is mapped and used in her workshops as the "source code" to be reprogrammed by the participants.

In the workshops, Gonzalez creates a workflow similar to computer programming, building every event on a thorough research of a famous fashion brand. For the participants, she presents the brand history and essential characteristics, and shows detailed images of the various elements and aspects of the brand's looks (Figure 2). These can be certain details, silhouettes, patterns, or fabric combinations that go through the history of the brand and Gonzalez highlights how they have evolved over the years. The characteristics become "functions" of the brand code, organized visually in subfolders in which the codes are sorted so the map looks like a meshwork-shaped flowchart with diverse sub-branches.

This code map is collectively built together with the participants and every "function" is presented as black-framed Polaroid photographs with images copied from the brand's catwalks, advertising, catalogs, books, and website.

In the workshop's first step she mounts some of these Polaroids on the wall, connecting the folders and codes with thread, showing the flow of code throughout the brand image and its collections (Figure 3). The participants have a stack of extra Polaroids with more images, as yet unmounted, and they are free to reinterpret the map structure, add their ideas, move images, and create other forms or code connections through the diagram.

From this code map Gonzalez helps the participants to create new programs, "plug-ins" or "patches" by remaking old clothes brought to the workshop by the participants (Figure 4). The participants can thus "brandify" their old clothes, making the reconstructed clothes mimic the decoded brand by combining elements from the codes collectively mapped on the chart. These new "updated" garments are often produced by means of quite simple procedures depending on the skills of the participants. Some new creations turn out as unelaborated reinterpretations of the brand's traditional color palettes, while others are thorough excavations into the cut and fabric composition of special collections.

It is in this simple but multilayered practice of decoding and re-designing that the special quality of Gonzalez' project becomes clear. Here, the workshop participants collectively map and discuss a brand's components, reverse-engineer this code, analyze materials, cuts, draping, details, and then reinterpret these impressions by creating their own code map, based, but not dependent, on the brand intentions. This is the point of departure from where new collective "clothing competence" is cultivated among the participants. From here they start to reconstruct the old clothes they brought to the workshop into new forms. Following their map, they mimic the original brand, but they do not make copies

Figure 3
Gonzalez mounts images and
subfolders of the Gucci code map
at the gallery wall. This map grew
throughout the project as participants
added and commented further on
the code. Photograph courtesy of the
author.

Figure 4
A detail of the code map during its
construction. The black-framed images
are original Gucci code while the
diagonally mounted Polaroid photo is a
new interpretation made by workshop
participants. The Polaroid is connected
to its inspirational sources. Photograph
courtesy of the author.
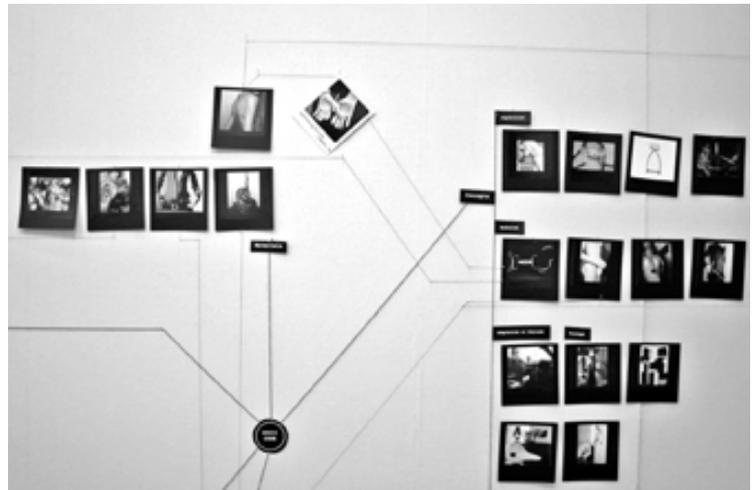
of what they see. Instead, they analyze their resources to see how their old garments can best become new code components, a code that performs the same visual or material function as the original brand. They remake something new, something unique, an experimental "program," out of second-hand clothes and an existing branded code (Figure 5).

The new garments or accessories, or "programs," are photographed with a Polaroid and mounted back onto the chart (Figure 6). The photographs are then connected with thread to their inspirational code cards to show how the code was used and from where visual code details were taken. As the map grows from old and new codes, the additions from the participants create diagonal or rhizomatic lines drawn through the original code map of images. The new programs become part of the code map on the wall and become just as true as the authentic ones,

represented in the same way, and new creations inspire other partici-
pants to build further. The participants were "Guccifying" their old
clothes at the workshop in Istanbul.

The workshop format by Gonzalez offers a systematic way to in-
terpret fashion expressions and a vocabulary for discussing details and
cuts, as well as practical help for the deciphering of the mapped codes.
Like hacking, throughout the workshop a line of practice developed that
focused on the mastering of coding skills, both reading code, finding
loopholes, flaws or strong codes, and hands-on reprogramming of the
code. At the end, the new garments or "programs" were running appli-
cations or patches, garments speaking the language of Gucci. They were
reinterpretations of the code, not copies, with a code as "real" as the
authentic pieces. Gonzalez created an atmosphere where participants,

regardless of their craft skills, created "authentic" Gucci pieces from their old garments. The workshop was like an extension of the Gucci studio, but where everyone became a Gucci designer. The resemblance to the real Gucci studio was apparently so accurate that, in a moment of confusion, one participant thought that I was Tom Ford, the famous head designer of Gucci.

The last step of Gonzalez' workshop is to turn the new "brandified" garments back into fashion images. In Gonzalez' own photos and videos she performs key features of famous brands and by embodying their style she steps beyond the mere representation of a sewn garment. Here she reenacts the whole array of the brand image: the posing, make-up, lighting, and context. Her end results are photos that make the full hack visible as the hacked garments reproduce the whole mythology of the brand. A mere collage technique of images could have been an alternative to her workshops, still playing with the visual code, but this would not have been enough. The important thing is how participants work with the physical material, become craft conscious, going from image to physical garment and back to image again. Experiencing materials, cuts, patterns, and sewing techniques and learning to see, experience,

and reproduce the expressive details of famous brands—true "clothing competence." When the participants leave their photos on the wall at the gallery as part of the new code map they again trigger a new circle for future participants, inspired by the previous crafters' code.

The participants in Gonzalez' workshops become practical fashion programmers, similar to the post-producers art theorist Nicholas Bourriaud calls "semionauts." For Bourriaud the semionauts, as agents of re-appropriation, draw new lines of practice, reconnecting sampled parts into new forms. "We tinker with production, we surf on a network of signs, we insert our forms on existing lines" (Bourriaud 2002: 19). Bourriaud emphasizes that this tactic is not a new one, but it is now the dominant one, and it does not try to establish a position of the radically new or the avant-garde. Instead the semionaut refers to the hero of our time, the sampler, the remixer, and the DJ.

What we have seen in Gonzalez' project is something very different from deconstruction in *haute couture*, even if the basic technique and material result might appear similar from a distance. What Gonzalez does in the "Hacking-Couture" workshops is to highlight shared endeavors and help participants explore new tools, methods, and skills with which they can better understand and develop the practice of hacking fashion. In these workshops participants collaborate to understand fashion, reverse-engineer a brand, draw new lines, reprogram the code, "surf on the signs," and "insert their forms on existing lines."

One could argue that the aim of Gonzalez' workshops is to subvert the famous *haute couture* brands or mock them, but the outcomes of her workshops show the opposite. Participants I spoke to after the workshop looked back on their experience with a much keener eye to the brand they had studied and played with. Gucci was now a brand with a multitude of meanings and a much richer character than they previously had thought, and they were now more perceptive on, for example, cuts, silhouette, and materials. By hacking brands they cultivated a very special "clothing competence." Through cooperation they built a new understanding of fashion while using the powerful desire projected through the fashion system to improve their craft skills.

The Dale Sko Hack

The example of Gonzalez is taken from the context of a gallery space but this does not mean that the hacking approach cannot be set in commercial or production environments. In April 2006 I experimented with a hacking methodology in a small shoe factory in Dale, Norway.

Here the emphasis was to break up the linear modes of mass production and create new settings for interaction and participation on the

factory floor through the design and production process. Hacking could be a way to revive craftsmanship in a milieu dominated by standardized delegations and strict hierarchical lines of command.

Dale Sko factory is situated in Dale i Sunnfjord, 150 kilometers north of Bergen on the Norwegian west coast. It is a century-old factory with a significant history of production but is today reduced to a small unit working with a limited range of shoes. The production involves a lot of manual labor so the shoes are handmade, although the process is machine-supported. The factory employs about a dozen workers today, down from about 250 workers twenty years ago. As its low budget does not allow the factory to keep up with fashion trends, it survives today mainly by producing folk dress shoes and from steady orders from government departments, such as the military or the police.

The intention of the shoe hack was to experiment with how new interfaces and protocols could be explored and developed between design and production on the factory floor. The aim was to create new approaches to post-industrial production and try to probe "nonlinear" forms of co-design during the normally strictly linear production process. Nonlinear in this sense means to escape the undeviating and predictable sequential workflows in production and to blend physical production of shoe co-design with renegotiations of delegation processes. With a nonlinear perspective on production the factory floor could be seen as a rhizome resource of multiple overlapping, intersecting, and connecting lines of practice which can all be recircuited and bent, and thus change the products without replacing any people, shoe-models or machines. This would change the flow within the factory, while at the same time creating unique designs, using the full skill of all those involved.

Central to the shoe hack was the invitation of six prominent Norwegian fashion designers to Dale, all of whom in some way defined themselves as Norwegian in their style of fashion. They were accompanied by a fashion photographer, a stylist, and a shoemaker/teacher. Our common aim was to experiment with the "software" of factory production methods instead of taking the more classic design approach of proposing new machine hardware in the factory, something that the factory could not afford.

A key feature of the hack was to use machines "wrongly," and thus the need for technical reinvestment was challenged. Operational misuse of the factory equipment, using machines at the wrong step in the process, assembling pieces in the wrong order, or using the wrong sizes of tools for various elements in production created new possible components when redesigning the old shoe models. Here the craftsmen could use their skills in new ways to experiment with the production process (Figure 7). With slight tunings of their tacit knowledge they changed the overall working processes on the factory floor. The designers guided the process and defined a palette of possibilities of how they wanted their models to look.

Figure 7
Workers and designers at Dale Sko factory during the hack. Photograph by Bent Synnevåg.

In the sense of reengaging the craftsmen in the production process, the project was similar to the utopian experiments of William Morris and the Arts and Craft movement in the end of the nineteenth century. At that time, Morris was trying to address the falling quality of mass-produced goods as well as the alienating labor at the factories. Morris suggested a more thorough design process and a return to work organized in medieval-style guilds. Nonetheless, in the Arts and Craft movement the designer was still the Auteur, the sole author of the work, and the "liberated" craftsmen were perhaps happy but still obedient slaves to the grand Auteur's will.

As such, the hacking at Dale Sko was not about replacing the operating system of the factory with strict craft or guild-like organization processes. On the contrary, it tried to escape master–apprentice relations, to trigger instead other forms of participation, sharing of ideas, and skill improvement throughout the organization. This meant that designers and producers shared co-design and co-authorship throughout the process and created a multiplicity of interfaces for new design interventions, allowing the models to mutate along the production process (Figure 8). This not only affected the general process or control of the facility itself, but also the design of every unique product, as workers could influence the production process. For many smaller factories this mix of craft and mass-production is a manageable scale of manufacture and it adds great value to designers and workers.

During the first day of the workshop the atmosphere was filled with anticipation and at first the craftsmen of the factory seemed slightly skeptical of the working process. Why change? But as the process went on the mood changed. On the first day, all workers went home when the bell rang signaling the end of the working day. But on the last day

of the workshop many of the workers stayed on after their working hours, helping the participants to finish their shoes and discussing the new models and working methods. Everybody seemed eager to get the collaboration working, come up with new models, and finish the prototypes at the end of the last day of the project.

It is perhaps the works of Siv Støldal that can be seen as a quintessential *modus operandi* of this type of hacking. She used the existing shoe models from Dale Sko, and recombined materials and parts into new forms. She changed leather materials, shifted soles between models, and introduced random punched decorations into the designs (Figure 9). But at the same time she kept the general design of every sub-part intact. With these methods for individualizing the shoes, every pair became unique. While preserving the integrity of the traditional models from Dale Sko this method became a point of departure and an instrument for her future collaborations with Dale Sko.

Following these examples one can argue that this method is quite common in design practice and perhaps not very radical, at least not when looking just at the finished models. However, what this method emphasizes is the collaborative work and the delegation protocols created by the designer in collaboration with the craftsperson. Through a hacking process the design can transform during the production process and every pair is co-designed. The input variables of the designer set at the start affect the process and make it predictable to a certain extent. But the designer also surrenders control and from a basis of shared trust the models can evolve in a responsive mode between the designer protocol and the ideas of the craftsperson. This is an implementation in Morris's spirit but in a nonlinear or rhizomatic way.

During the workshop, the project also received a large amount of local and national coverage in the press, radio, and television. Bringing

Figure 9

On one of her prototypes, Siv Støldal changed the materials of the original Dale shoes and introduced random patterns of punches so that every pair would be unique. This model was later put into production. Photograph by Bent Synnevåg.

in the eyes of media as well as putting the spotlight on the collaborative working process created a renewed pride of the craft element in the factory's work. Dale Sko came to be recognized and respected not only for its century-old merits but also for its concern to go further, innovate, and continue to be a progressive local player with global fashion connections. The media attention became a form of recognition for this hard work and boosted the confidence of the factory.

The process during the workshop also showed how important it is that negotiations with all those involved are done in a humble and respectful manner. To deal with a proud local actor such as Dale Sko that is in decline, is a sensitive balancing act where the designers have to proceed with caution so as not to hurt any feelings during the process. Big ego designers are not usually the best negotiators and could seriously harm both the collaborative design process as well as draining the energy invested into the project. But as was shown during the workshop

it is possible to create positive changes and break habitual patterns in a factory through wide participation and open negotiations by working on small scale.

The traces of the project are still visible today. Støldal has continued her collaboration with Dale Sko and is currently (in Fall 2008) making her fourth collection with them, still using the existing models of the factory as her practical point of departure (Figure 10). The new shoes have been shown at the fashion weeks in London, Paris, and Tokyo and are for sale in stores in London and other cities. The factory also developed a prototype lab and since the hack has hosted several other designers and interns from fashion schools. In addition, the board of directors of the factory has been changed and one designer as well as the shoemaker/teacher have been taken onto the board. In 2008 the project also won a special prize at the European Fashion Awards.

The factory, in the past the main employer and gem of the town, now demonstrates an imaginative and innovative spirit with high future ambitions and is once again the source of local pride. It is a meeting place between the global fashion system and local quality production. Designers and producers meet here for practical dialogue in collaborative design processes and here they can bring together clusters of "material publics" (Marres 2008) and negotiate issues with regard to the production process. In Dale small material publics of specific value are created—material, economic, craft, and mythical—and they all can all call the production process their own.

This could mean that Dale, a small town in the Norwegian countryside with 1,500 inhabitants, is no longer a place where the signals of fashion can only be received in magazines distributed from afar. Fashion cannot only be read in Dale, but instead is a place where fashion is now

written. Fashion is not only enacted here but also co-produced. Dale Sko is a place where the craftsmen are now to a greater extent fashion-*able*.

Discussion

The examples above show how hacking can change the way designers interact with consumers and production processes and how they together can grow new forms of "clothing competence" that not only affect consumer behavior but indeed the whole production process of fashion. Where designers surrender some control and build better interfaces between the design process and producers or users, new bonds and innovative serendipities emerge that can benefit all parties involved in the process.

The knowledgeable reader might now interject and propose that all subcultures in fashion have originated from similar points of departure or attitudes as proposed in this article, but I would object to this comparison. The subcultures of fashion, perhaps the most famous is the punk movement, started as a "drop-out" style, refusing to have anything to do with fashion. Paradoxically it also quickly turned into another hierarchical ready-to-wear style, heavily influenced by the inner circle of rebels. Even the queen of DIY punk, Vivienne Westwood, swiftly became a designer "dictating" what characterized the subculture she came to represent.

But with the practice of hacking something else takes place between the engaged participants, it is neither a "drop-out" anti-fashion nor a "subversive" subculture trying to undermine the existing fashion. As mentioned earlier, the hacking culture opposes the ready-to-wear paradigm to focus attention instead on participatory modes of production. Fashion hacking is about empowerment, capacity building, and clothing competence through collaborative endeavors and open source methods with wide interfaces between co-designers. The ideal is to build a community of skillful fashion craftsmen and women by using the power of fashion, recircuiting its power to be more accessible.

This perspective resonates well with sociologist Sharon Zukin's take on craftsmanship. According to Zukin, consumers today need more skills to understand craftsmanship. To acknowledge the basics of craft and quality leads to more insightful consumption. For Zukin, the present-day "consumer lacks the production knowledge that earlier generations commanded" (Zukin 2004: 185). To be more insightful consumers we need to have more knowledge, specifically craft knowledge. By this Zukin means:

> a sensory appreciation of a product's qualities, a modest understanding of different production techniques, and the imagination to construct a product's "back story"—a social narrative of the cultural tradition from which the product comes. (Zukin 2004: 185)

As sociologist Richard Sennett proposes, this craft knowledge is a change in our everyday perception of the world. In this first step, consumers will have to train to get the eyes of craftsmen, since "the modern consumer needs to think like a craftsman without being able to do what a craftsman does" (Sennett 2006: 143). The approach of craftsmanship leads not only to a more sustainable consumerism, but can also change the way we live. As Richard Sennett says: "The emotional rewards craftsmanship holds out for attaining skill are twofold: people are anchored in tangible reality, and they can take pride in their work" (Sennett 2008: 21).

Fashion designers can learn from the hacker culture and use their skills and techniques to engage consumers into becoming co-authors of new designs, bringing them closer to the design process than the strict border of purchase guarded by the cashier. By surrendering some control, designers can open interfaces and room for closure to consumers, engaging them in a closer partnership and more willingly share their "code." This would also allow consumers to tap into the creative powers residing in the design process, where this fashion "code" is written. Likewise, design educators could offer a wider perspective on how to work as a socially engaged designer where students learn to negotiate and better navigate the tensions between their roles. The role of the designer is not necessarily the divine "genius" at the top of hierarchy handing down the latest prophesy to the awaiting believers. The privilege of being the "active" part, usually restricted to designers, where the consumers' roles are limited to being "passive" downstream, can be rearranged into a multitude of new forms of symbiosis.

Fashion hacking offers a methodology for participatory modes of design practice where consumers' own craftsmanship can play a key role. With this approach, fashion can become a workshop for collective enablement where a community shares their methods and experiences. Hacking can liberate one part of fashion from the phenomenon of dictations and anxiety and instead make fashion become a collective experience of empowerment through engaged craft. In this way the sewing machine can become an instrument for everyday liberation and not only a symbol of sweatshop work. Fashion hacking can be a tool for the development of craftsmanship, and a path for many to become more fashion-*able*.

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