

## **fashion meets discretion**

Graham Cutler, Tony Gross, Alain Mikli, Sam Hecht  
Ross Lovegrove, Nic Roope, Aimee Mullins, Alexander McQueen

Hugh Herr, and Jacques Monestier  
spectacles and eyewear, hearing aids and *HearWear*  
pink plastic legs and curved wooden legs, split hooks and golden hands



## discretion

The priority for design for disability has traditionally been to enable, while attracting as little attention as possible. Medical-looking devices are molded from pink plastic in an attempt to camouflage them against the skin. The approach has been less about projecting a positive image than about trying not to project an image at all.

But is there a danger that this might send out a signal that disability is after all something to be ashamed of? If discretion were to be challenged as a priority, what would take its place? *Invisibility* is relatively easy to define, and may even be achieved through technical and clinical innovation alone, but it is more difficult to define a positive image purely from these perspectives.

## fashion

Fashion, on the other hand, might be seen as being largely concerned with creating and projecting an image: making the wearer look good to others and feel better about themselves.

Eyewear is one market in which fashion and disability overlap. On the rare occasions that the words *design* and *disability* are mentioned in the same breath, glasses are often referred to as the exemplar of a product that addresses a disability, yet with little or no social stigma attached. This positive image for disability has been achieved without invisibility.

## tension

Fashion and discretion are not opposites, of course: fashion can be understated, and discretion does not require invisibility. Nonetheless, there is a tension between these qualities because they cannot both be the absolute priority. There are also deep cultural tensions between the two design communities. Perhaps fashion with its apparent preoccupation with an idealized human form is seen as having little to say about diversity and disability. The extremes and sensationalism of cutting-edge





fashion can seem inappropriate in the context of disability, where discretion is seen as being so important. For some in the medical field, the very notion of being in fashion, of designs coming and going, is the antithesis of good design.

But learning from fashion might require embracing not only its design qualities but also more of its values. Fashion does not just arise from a particular set of skills but creates and requires a culture. The mechanism through which fashion design evolves, whether through haute couture or street fashion, creates extreme designs that can provoke negative as well as positive reactions in different audiences. It may not be possible to have one without the other, to have the results without the culture and the values.

This chapter will consider the way that spectacles have evolved from medical aids to fashion accessories, reflecting on how this might inform the design of other products. In the case of hearing aids, this chapter looks at a recent initiative to inspire design research; in the case of prostheses, it anticipates such engagement in the future.

### glasses

Glasses or spectacles are frequently held up as an exemplar of design for disability. The very fact that mild visual impairment is not commonly considered to be a disability, is taken as a sign of the success of eyeglasses. But this has not always been the case: Joanne Lewis has charted their progress from medical product to fashion accessory.<sup>1</sup> In the 1930s in Britain, National Health Service spectacles were classified as *medical appliances*, and their wearers as *patients*. It was dictated that “medical products should not be styled.”<sup>2</sup> At that time, glasses were considered to cause social humiliation, yet the health service maintained that its glasses should not be “styled” but only “adequate.”<sup>3</sup> In the 1970s, the British Government acknowledged the importance of styling, but maintained a medical model for its own National Health Service spectacles in order

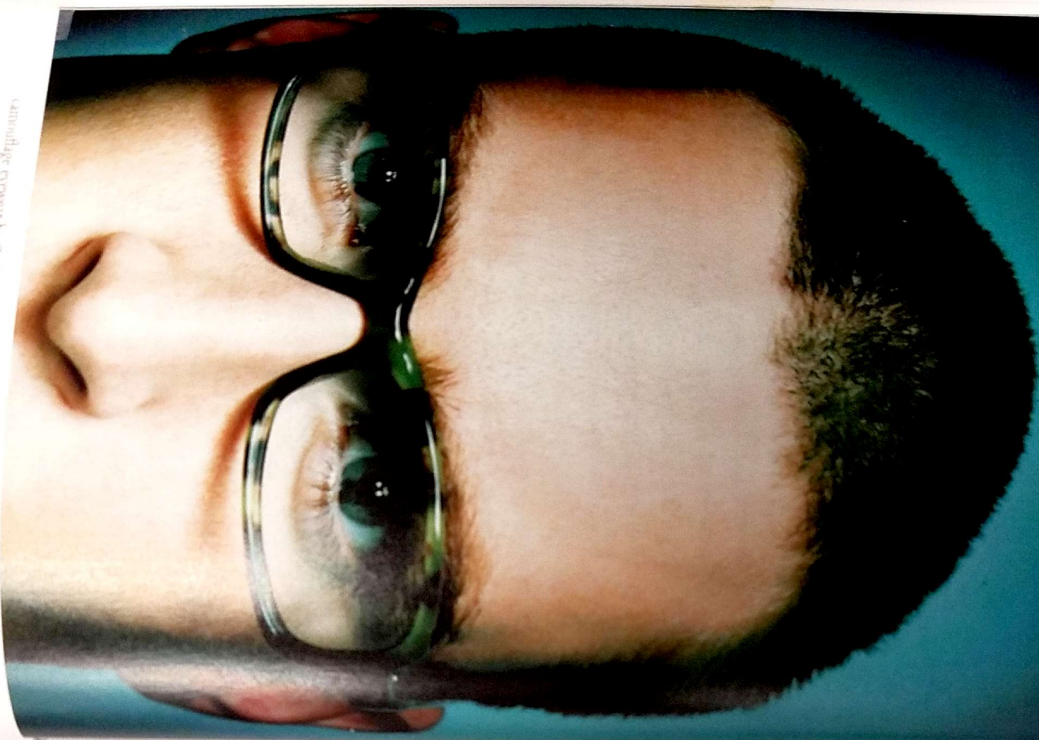
to limit the demand. In the meantime, a few manufacturers were offering fashionable glasses to consumers who could afford them. As recently as 1991, the design press declared that “eyeglasses have become stylish.”<sup>4</sup>

These days, fashionable glasses are available in the shopping mall or on Main Street. It has been reported that up to 20 percent of some brands of glasses are purchased with clear nonprescription lenses, so for these consumers at least wearing glasses has become an aspiration rather than a humiliation.<sup>5</sup> So what lessons does this hold for design and disability? There are several, especially in relationship to the widely held belief that discretion is the ultimate priority in any design for disability.

First, glasses do not owe their acceptability to being invisible. Striking fashion frames are somehow less stigmatizing than the National Health Service’s supposedly invisible pink plastic glasses prescribed to schoolgirls in the 1960s and 1970s. Attempting camouflage is not the best approach, and there is something undermining about invisibility that fails: a lack of self-confidence that can communicate an implied shame. It is significant that glasses continue to coexist with contact lenses, which do offer complete invisibility.

But neither is the opposite true: glasses’ acceptability does not come directly from the degree of their visibility either. Brightly colored frames exist, although they are still a minority taste. This might serve as a caution to medical engineering projects that have adopted bright color schemes for medical products “to make a fashion statement” as the automatic progression from making a product flesh-colored. Most spectacle design, and design in general, exists in the middle ground between these two extremes. This requires a far more skilled and subtle approach—one that is less easy to articulate than these extremes. Designers often use the term *materiality* to describe the inherent aesthetic qualities of different materials. Materiality is hugely important to design in general and





University eyewear by Culter and Gross

spectacle frames in particular, yet it is so frequently absent outside a design culture. Manufacturers such as Alain Mikli are perpetually exploring new combinations of laminations, translucency, color, and decorative texture.<sup>6</sup>

And the most elegant frames can be let down by a badly resolved hinge detail or the way a nose bridge meets the frame. Everything is on display and contributing to the whole. Everything must be visually resolved—an attention to detail that is demanding even for the best designers.

### eyewear

Spectacles have become *eyewear*, and this term encapsulates a number of important perspectives—perspectives that are currently missing from much design for disability. You wear glasses rather than carry or just use them. Somehow, the term user becomes inappropriate. *Wearer* sets up a different relationship between the designer and the person being designed for.

Of course, glasses are designed not as products in isolation but in relation to the body, and the most personal part of the body at that. This makes glasses' acceptability all the more impressive and encouraging. They frame not only their own lenses but more important, our face, eyes, and glances. With this comes the risk of a design not suiting a particular individual, or that individual not liking the design, and so the need for variety and choice.

This acknowledges the shift in perspective from a medical model to a social model of prescription. In the past, spectacles were seen almost exclusively in terms of their vision correction. This broader perspective acknowledges the significance of the perceptions of those around you: "What others see is more important than what you see yourself," as design writer Per Møllerup said of glasses.<sup>7</sup>

Eyewear positions glasses more as items of clothing than as products. A different approach, different references, and different designers spring to mind when thinking about glasses



in this way. Alongside specialist spectacle manufacturers, many fashion labels design and market eyewear collections. Collections, labels, and brands: these words set up different expectations and engagement from consumers. And consumers is a long way from patients or even users.

Fashion and trends become relevant. Materials and color play off clothing, accessories, and cosmetics; shapes work off hairstyles, not just bone structure. Wearers look forward to purchasing a new pair of glasses for the opportunity to try something different and reinvent themselves a little, as they might look forward to a change of haircut, or buying a new outfit or wardrobe of clothes.

Design becomes freighted with cultural references. Do these frames look rather 1970s? Are these flirting with bad taste? Designs can date and come back into fashion. Fashion moves forward through its avant-garde, be that couture or street culture. So embracing fashion necessitates going too far at times.

Eyewear designers Graham Cutler and Tony Gross have spent thirty years on the front lines of the revolution that turned eyewear "from medical necessity into key fashion accessory."<sup>8</sup> It is interesting to note how recent this revolution was, given how much it is now taken for granted. But Cutler and Gross describe themselves as the enfants terribles of optometry, and their role even now is to constantly test the limits of taste and style. Many of their frames refer back to vintage designs, and even play with past negative perceptions of glasses as nerdy and unfashionable. Nevertheless, Cutler and Gross glasses are always individual and glamorous, without being ostentatious (having no visible label), and their customer base transcends age and occupation.

This in itself is contentious. Many groups involved in design for disability subscribe to a culture of problem solving, evident in their methodology and work, and may even see fashion as the antithesis of good design. The thought of changing a hearing aid or prosthesis just because it had gone out





of fashion or its wearer fancies a change may be anathema to them. Certainly, fashion designers are rarely part of teams even developing wearable medical products, which is incredible considering the specialist skills they could bring as well as their experience and sensibilities. But if we are serious about emulating the success of spectacle design in other areas, we need to involve fashion designers, inviting them to bring fashion culture with them.

### hearing aids

Compare glasses with hearing aids, devices developed within a more traditional culture of design for disability where discretion is still very much seen as the priority. Discretion is achieved through concealment, through a constant technological miniaturization. The evolution of the hearing aid is a succession of invisible devices: objects hidden under the clothing, in the pocket, behind the ear, in the ear, or within the ear. As the hearing aid has grown ever smaller, it has occasionally broken cover only to migrate from one hiding place to another. What has remained the same is the priority of concealment.

Such miniaturization has involved amazing technological development, but it is not without a price. Brian Grover, a technology expert at RNID, says that hearing aids' performance is still compromised by their small size and that they could deliver better quality sound if they weren't so constrained. This is how fundamental the priority of discretion can be. Yet for many hearing-impaired people, their inability to hear clearly is far more socially isolating than the presence of their hearing aid.

Where total invisibility is impossible, the last resort has been to mold hearing aids in pink plastic, betraying a white, Western bias in itself. Somehow this is the epitome of the medical model, perhaps echoed in the very term *hearing aid*. While this can set up an interesting countercultural appeal,





apart from the singer Morrissey, few people have been known to wear a hearing aid for show when they do not need one. Recently, hearing technology manufacturers have discovered an alternative model. Many are turning to wireless cell phone earpieces as an example of positive imagery for technology worn in the ear from mainstream consumer product design. This is a welcome broadening of approach, but the mistake is to overlook the strong cultural associations of these devices—associations not easily perceived from within research and development departments: the trend for futuristic wireless earpieces in silver plastic with blue LEDs is aimed squarely at a technological early adopter, a market eager to emphasize its technical sophistication. These overtly technical products send out strong cultural signals that not everyone would be comfortable with, while largely ignoring the sensibilities involved in spectacle design.

### HearWear

If anything, you might expect hearing aids to be less challenging than glasses: they don't obscure the face; there are strong traditions of ear adornment and jewelry in most cultures; and we all reach for earphones and headphones from time to time. But somehow, rather than adopting a diversity of design approaches, the hearing technology industry has remained conservative, perhaps because it is preoccupied with its perpetual technological development.

That is why RNID and Blueprint, the architecture and design magazine, launched HearWear, setting leading designers the brief to consider hearing aids and hearing technology from a fresh perspective. As Henrietta Thompson, deputy editor of Blueprint put it, "Over the decades there has been an amazing amount of technical development of hearing aids, but in that time little or no design investment has occurred."

Hence the name HearWear, to emphasize a move away from considering hearing aids as technology. We had discussed



*The Beauty of Inner Space designed by Ross Lovegrove for RNID HearWear project*



whether *camwear* was more appropriate, being the direct analogy of eyewear, but opted for *hearmwear* to open up the possibility of ideas that weren't just worn in the ear itself. One example is an experimental hearing aid developed in the United States that comprises an array of microphones on a necklace, providing high-quality, directional sound.

Sam Hecht of Industrial Facility is an industrial designer who has practiced in Tokyo, San Francisco, and London, and these influences combine in his typically strong yet quiet designs. Hecht makes the most direct connection with the design of eyewear by incorporating hearing technology into the arms of a pair of spectacles, with the arms branching to support integral earpieces. But he goes one step further than conventional hearing aid configurations, proposing an array of microphones, not just one on each side, thereby supporting superdirectional hearing when the signals from each are processed together. What it means to design a hearing aid changes if normal human ability is being surpassed, not just restored, and the design plays an additional role in expressing these augmented capabilities.

Product and furniture designer Ross Lovegrove brought his subtle, organic forms to a new visual language for wearable noise-canceling technology, in his response *The Beauty of Inner Space*. His design mixes biological forms appropriate for a prosthesis with the overt technology of carbon composite and the ambiguity of gold—at once a high-tech and traditional material with associations with both hi-fi and earrings. Like jewelry, the design seeks to complement the body rather than attempt to be camouflaged against it. Notice that the earphones are recessed to present an ear apparently open to sounds from the outside world, whereas a more convex form might have signaled that the wearer is listening to something else. The sparing use of gold at the earpieces accentuates their sensitivity.



Nic Roope of Hulger is known for the playful P\*Phone, full-size retro telephone handsets that can be plugged into cell phones or computers for voice-over Internet protocol. The *Weatherhead\*Phone* is an enormous set of headphones with a military camouflage paint job. Whatever the technical justification for their size, they also represent a supreme gesture of self-confidence—the antithesis of current hearing aids. The camouflage is a reference to street culture, but could also serve as an ironic commentary on the attempted camouflage of pink plastic hearing aids that are conspicuous but pretend to be invisible.

Of all the product designers who submitted concepts, seventeen in all, Hulger engaged with the brief in a way we would have seen more of had fashion designers also been invited. Fashion designers would probably have gone further still. Even after HearWear, there is still value in provoking yet more extreme approaches, just as eyewear is constantly pushing its own boundaries.

What the project demonstrated so successfully was that wherever an orthodox approach seems self-evident, there are always radical new perspectives that can challenge this. Designers are particularly skilled at breaking new ground in this way, but also at cross-fertilizing different fields. So ironically, medical engineering might particularly benefit from the involvement of designers who are not experts in medical products but bring fresh approaches from other consumer markets. And in turn, these designers would be afforded fresh perspectives to enrich and inspire subsequent work in their own areas.

## bodywear

In many ways a more challenging area of design for disability is prosthetic limbs. Glasses are worn over the eyes, but they are not replacements for the eyes themselves. Similarly, hearing aids augment the ears. But prosthetic limbs are extensions

of the body, not distinct products to be picked up and put down, and as such their design is more sensitive. In some ways it is the body itself that is being redesigned.

Given a challenge of this sensitivity, it is surprising to find that a role for any designer other than design engineers is not even widely acknowledged within prosthetics. A recent contract issued by the U.S. Defense Advanced Research Projects Agency to develop a prosthetic arm made no mention of anything needing to be designed, other than a human form and capabilities being achieved. Correspondingly, the call for proposals demanded an impressive multidisciplinary team of engineers, technologists, and clinicians, but made no mention of industrial designers or interaction designers, let alone sculptors.

## legwear

A striking and memorable image of a different attitude to prosthetics is that of the athlete, model, and actress Aimee Mullins, seen here wearing her carbon fiber running legs, tracksuit bottoms, and nothing else. It is taken from the cover of the fashion magazine *Dazed & Confused*, an edition guest edited by fashion designer Alexander McQueen around a theme of fashion and disability, titled "Fashion-able?"<sup>10</sup> I have always liked this photograph for walking what I saw as a fine line between self-confidence and sensationalism. But in conversation, Mullins explains that it was not premediated, and arose naturally out of a collaboration between McQueen, herself, and the photographer Nick Knight. "Our intention was to explore a body with a serious intent and create a beautiful image."<sup>11</sup> The pose and the clothing were aesthetic considerations.

Mullins could be said to have become an icon of the capable and glamorous disabled person, yet she is clear herself that the best thing she can do for people with disabilities is not to be thought of as a person with a disability. Returning to visual impairment, she admires Ray Charles as a musician,



not for having been a blind man. Likewise, Mullins does not like being looked at as a disabled athlete, and has resisted what she refers to as a NutraSweet emphasis on achievement in the face of adversity.

The unashamed artificiality of Mullins's prostheses is still controversial (perhaps even more so when worn by a woman? But gender-related issues, among other significant political and economic concerns, are not the focus of this book). Their abstract elegance challenges the duality that has existed for so long between aesthetics and functionality. Conventional wisdom is that prostheses should either be made for appearance, so-called cosmetic limbs that are an accurate copy of the human body, with optimized functionality within this constraint, or for optimized functionality above all other considerations, as are tools. But Mullins's legs show this to be too simplistic. Her legs have a beauty of their own, not just as objects, but also in relation to her body and posture. Many attributes of even a functional prosthesis affect the image its wearer will project—implications that may not even be treated as conscious design decisions. But they could be, and designers could play a valuable role.

She thinks that fashion designers and jewelry designers should be involved in design for disability as a matter of course. "Discreet?" she sniggers. "I want off-the-chart glamorous!"<sup>12</sup> For her, modern luxury is less about a desire for perfection as a desire for options. Her wardrobe is made up not only of different clothes that can make her feel a different way, but also different legs: there are her carbon fiber running legs, various silicone cosmetic prostheses, and a pair of intricately hand-carved wooden legs. "I'm thinking about what I'm going to wear them with: jeans and motorcycle boots, or my Azzedine Alaïa dress if I want to feel amazing."<sup>13</sup> Her legs too can make her feel amazing in different ways: a pair of silicone legs that are several inches longer than her own legs would be, make her (even) taller and more elegant on the catwalk,



Aimee Mullins's carved wooden legs



while her eerie glass legs have an element of magical realism. This very choice becomes part of her individual identity and also a collective experience, shared with her friends: "Which ones are you wearing today, Aimee?" From the perspective of the health insurance companies, Mullins says that "every single pair of my legs are considered unnecessary." But an element of fantasy among the practicalities of everyday life is important to her. Even, as she wryly puts it, to express a certain shallowness.<sup>14</sup>

Someone with quite different attitudes to his prostheses, Hugh Herr, shared a platform with Mullins at the h2.0 symposium, subtitled "new minds, new bodies, new identities," that sought to blur the distinction between "able-bodied" and "disabled."<sup>15</sup> Herr heads the biomechanics group at the MIT Media Lab, where this event took place in May 2007. He lost both of his legs in a climbing accident when he was seventeen years old. As he came to terms with his disability, his prostheses became an important part of his self-image. But he still thought of himself as a climber, not an amputee. He fashioned himself climbing prostheses that gave him a foothold where others couldn't even gain a fingerhold, and telescopic legs that could be extended during a climb to be any length, shorter or longer than his original legs—even each leg a different length. Then he witnessed the reaction of his fellow climbers turn from pity to calls for him to be disqualified from competitive free-climbing for having an unfair advantage.

In those early days he was quite prepared to draw attention to his new legs, decorating them with polka dots in order to shock people. These days he's more restrained in both his dress and the aesthetics of his prostheses, but just as passionate about his team's work. If one individual's own attitudes have evolved over time, how much more does prosthetics need to embrace and accommodate a diversity of attitudes? Populations of people with disabilities can be every bit as diverse as society in general.





Herr agrees that art school-trained designers could play a valuable role as prosthetics moves forward, especially into exciting new territory in which human abilities are not just restored but surpassed. And when prostheses become not just replacement human limbs, then their design will help determine and communicate just what they are instead.

#### armwear

Prosthetic hands are even more intimate than prosthetic legs, yet again it seems that there are only two common approaches: those of realism and functionalism. The realistic approach is defined as a visual imitation of a human arm, and so the materials are chosen for their ability to be formed to visually represent human skin: PVC plastic and silicone in shades of pink and brown with molded wrinkles, nails, and sometimes even veins. But the static visual appearance is only one aspect of the aesthetics of any object. Some amputees have spoken of not liking the feel of their hand. They, like anyone, unconsciously cradle one hand in the other, yet the materials chosen for their visual resemblance to skin are rubbery and clammy to the touch, and can feel dirty somehow. Some amputees even complain that their prostheses smell unpleasant.

The opposite, functional approach prioritizes how well a prosthesis works over how it looks, and has resulted in split hooks. These may work well as tools, but any hand is more than a tool—it becomes part of the wearer's body image, a visual as well as a functional termination of their arm. Yet the design of split hooks barely acknowledges the wearer's body or their clothing.

Sculptor and creator of automata Jacques Monester has created a prosthetic hand that represents a provocative alternative to both hands and hooks. It is a design that simultaneously acknowledges its role yet also its artificiality. The back of his golden hand is cast in the likeness of a human hand, but from an alloy; the palm is upholstered in soft, luxuriant



leather. As Monestier explains, "Amputees often suffer a loss of self-image. I wanted to transmute what might be considered a disfigurement into something marvelous and exotic. I wanted to create a hand that would no longer cause shame and repulsion. I wanted the amputees themselves to be proud to have a prosthetic hand and pleased to look at it. And for the people around them, I wanted the prosthetic hand to be an object of healthy curiosity, a work of art."<sup>16</sup>

Monestier worked with leading prosthetist Jean-Eric Lescocour, but was also inspired by a sixteenth-century painting of a surgeon fixing an artificial hand to an injured soldier: "It was an armored gauntlet, like a golden hand. A beautiful, vibrant, quasi-mythical object—nothing like those dead, pink, plastic hands which pretend to imitate human flesh. This was the hand I wanted to create, with the added refinements of modern materials and technology."<sup>17</sup>

New possibilities need not be seen as a rejection of existing devices, which so many users are happy with: some prefer their prosthesis to be an overt tool; others feel most comfortable wearing no prosthesis at all; and others still do want the discretion of a cosmetic hand above all things. But some amputees are not so comfortable at present. I have talked with an amputee who didn't like wearing her prosthesis because it would initially "fool" new acquaintances, for them only to realize later it was artificial, and she dreaded reading their moment of realization. Monestier's hand gets this moment out of the way right at the start.

It seems important to continually challenge existing approaches, just as this is the way in which every other area of design, art, and science progresses. All too often attitudes are spoken of as if homogeneous. "Amputees want discretion." Well, not everyone. Not always.



golden prosthetic hand by Jacques Monestier



## embracing fashion

The evolution of glasses from medical appliance to fashion accessory challenges the notion that discretion is always the best policy. Hearing aids, prostheses, and many other products could be inspired by this example. More confident and accomplished design could support more positive images of disability.

Eyewear has come about by adopting not just the language of fashion but also its culture. If medical design wishes to emulate this success in other areas, it needs to appreciate that fashion often moves forward through extreme and even controversial work, and to welcome this influence within design for disability. We have to do more to attract fashion designers to collaborate on designs for people with a disability, and bring their perspectives to both the practice and culture of inclusive design. At times this will expose cultural differences, but these are healthy tensions, well worth embracing and harnessing.

## exploring meets solving

Marcel Breuer, Shin Azumi, Tomoko Azumi, Jasper Morrison

David Constantine, Shelley Fox, Li Edelkoort, and Bodo Sperlein

Bath chairs and Gouy chairs, chairs and wheelchairs inspired by bicycles

chairs from Milan, chairs from Japan and wheelchairs from Cambodia

Blind design and braille for the sighted