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# Identity politics by design: users, markets and the public service provision for assistive technology in Norway

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This article discusses the significance of aesthetics and individual design within assistive technology (AT) and argues that its importance for quality of life has been a neglected issue in the public service provision. The market structure, demands for an effective administration combined with a clinical approach to disability within public services construes a rigid service system disempowering active users. Based on personal interviews with wheelchair users and people who are hard of hearing in Norway, the article presents an analysis of how people use and look upon their AT. The relationship between user, product and society is analysed as representation of identities, as strategies of distinctions and as different ways of opposing the patient role.

**Keywords:** identity politics; aesthetics; design; assistive technology; disability

## Introduction

Issues of design and aesthetics are of utmost importance in many markets when shaping selves and self identities. But how do people cope when choice is *restricted* such as in the assistive technology (AT) market? This article discusses the tension between public services being patient-oriented and individuals struggling to make AT match their personal identities and how they try not to be 'reduced' to a fixed essentialist category of disability because they use a wheelchair or a hearing device.

AT is important and highly useful across identities. It is a prerequisite for an independent life. It integrates people into the community and facilitates participation and the creative shaping of selves and social identities. AT deals with important rehabilitation issues and has been closely connected to medical discourses within public services. Using AT is symbolic, but also culturally and historically contextualized. Most of the technologies have been produced as medical products and distributed as such since the first half of the twentieth century (Woods and Watson 2004a, 2004b). Traditionally, AT has had a double-edged nature within public services, as a tool for independency and for disability (Scherer 2002). As a tool for disability it has symbolized the medical approach to disability.

In this article AT is not viewed as being limited to helping people overcome environmental barriers only. It is viewed as more than mere compensation for functional limitations. AT is viewed as types of individual design representing personal identities and abilities. According to Anderberg, 'design for me' is the user's

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own perspective: 'It is tailor made to fit the needs of the individual and where full personal control is seen as a prerequisite for high quality' (Anderberg 2006, 51). The aim is to contribute to moving disability out of the realm of medicine into culture, recasting disability from a form of pathology or a lack, to marginalized identities (Garland Thomson 1997; Watson 2002; Ratzka 2003; Breivik 2005).

   Disability is only one of a number of governing narratives by which people constitute themselves (Somers 1994). By identity politics I do not mean an identity built on the notion of a common group identity of disabled people or identity based on difference (Watson 2002). It is identity politics seen as individual life politics (Giddens 1994), reconstructed through the narratives of individuals based on their experienced stigma and dependency on public services where lack of choice, information and control prevails. Another reason for emphasizing identity as a point of departure is that up to now little attention has been paid to the gendered nature of disability, nor to ethnicity, class or lifestyle. When it comes to the topic of wheelchairs, for instance, the subject in disability studies has basically been modelled on the white, Western, male wheelchair user's situation (Barron 2002). Ethnicity, class, gender, sexuality, lifestyle and age are all neglected aspects of disability. This article primarily pays attention to aspects such as gender, style and age, as well as the feeling of well-being.

## Narrative analysis

This article is based on an analysis of personal interviews with six wheelchair users and five hard of hearing persons, both women and men aged between 23 and 68 living in large cities in Norway. Eight of them were recruited through their respective organizations, one was recruited through a supplier, and one at an AT exhibition. The last one was recruited via one of the other interviewees. I also draw, to a certain extent, upon a parallel analysis of the institutionalization of the provision of AT in Norway, based on a study of policy documents, websites and personal interviews with 15 public and private service providers, suppliers, regulators, designers and producers.

   I have analysed narratives of 11 disabled women and men that are using wheelchairs (manual and powered), hearing instruments and alarm devices. The analysis is based upon 'conceptual narrativity' (Somers 1994), a method to discuss how disabled people perform identity politics by design in a 'disconnected' non-consumer market. Conceptual narratives are concepts and explanations constructed by researchers:

> The challenge of conceptual narrativity is to devise a vocabulary that we can use to reconstruct and plot over time and space the ontological narratives and relationships of historical actors, the public and cultural narratives that inform their lives, and the crucial intersection of these narratives with the other relevant social forces. (Somers 1994, 620)

It is an analysis of their narratives on their relationship to their assistive technologies and the public services they receive.

## Challenges of the existing organization of AT

In many welfare states the provision has been construed as a special state–market mix in order to increase fairness and access. In Norway the market has become highly

state-regulated since 1994 (NSH 2004). In other countries, as in the UK, the market is less regulated and the structuring of the provision more decentralized, where private actors also participate. Analyses of the provision system show that it has been and still is dominated by the medical model in which mainstream standards or clinical designs are applied, as opposed to a social or a cultural model applying aesthetic or individual design. This is the case in many countries (Sapey, Stewart, and Donaldson 2004). In Norway the provision is national and centralized. The state and the counties decide upon assortments, whilst the municipality has the overall responsibility for health and rehabilitation for its citizens (National Insurance Administration (NIA) 2003).

One of the reasons for the reorganization in 1994 was a demand for more control with public expenses as well as a quest for a more effective administration of the provision (interview with leader in the NIA). After that the NIA has entered into tender and framework agreements lasting for two to three years (six years regarding hearing instruments) with suppliers. (Since 2006 it is the Norwegian Welfare and Labour Organization that has called for tenders.)

From the NIA's perspective, tender services and framework agreements led to a national assortment of 'good quality at an acceptable price' (NSH 2004). According to a supplier, tender agreements did help in reducing price levels. On the other hand it contributed to raise other costs, such as suppliers' maintenance costs. Tender services combined with framework agreements also made it more difficult to get new models introduced to the market. 'Trying to introduce a new model before the two or three years has gone is difficult, especially if the new model is more expensive' (interview with supplier). Another implication of the reform was that users could no longer go directly to suppliers or to the county Assistive Technology Centres (ATCs), but had to go through their local service provider. The county ATCs became second-line services choosing their own local assortments from the national assortment.

Services for hearing devices are split in two, as hearing instruments are provided for by private audiologists or by hospitals whilst alert devices are provided for by the ATCs, thus making it complicated for users if they need to adjust the instruments with other types of equipment (interview with users).

The state demand for an effective administration of the ATCs, such as the request for 50% recirculation of wheelchairs, as well as more and more restricted local assortments and the restructuring of services to second-line services, created a very tense relationship between ATCs and users after 1994 (Helgøy et al. 2000). The Norwegian market can therefore be described as closed and homogenous, with the welfare state as the sole buyer of AT. It is the state that regulates market prices, secures quality and gives loans of assistive devices to users. This structure has certain pros and cons for users. It secures good solid products at a reasonable price, but deprives users of choice and control. It appears as a market dominated by a few big companies – an oligopoly – selling their products to the state based on tender agreements, thus making it easier for the state to regulate, but difficult for smaller companies or new designs to enter the market. This market structure, combined with a clinical approach to disability, construes a rigid service system disempowering active users regarding choice and control, especially when it comes to questions of design and aesthetics of AT.

The overarching aim, besides making the system more effective, has been to increase fairness and access. This is, however, difficult to reach. The assortments might differ between counties and they are stable over time, partly due to tender

agreements and to limited maintenance capacities. If a wheelchair is no longer part of a tender agreement, the user has to accept a different chair. Users do not get information about new devices and designs, and there is no independent body with an overview of market developments (interview with users).

To make it easier for users to get what they need without going to 'Canossa' and experiencing a humiliating ordeal, the government in 2006 introduced individual plans (the so-called 'user's passport') similar to a voucher scheme. This is not direct payments, but an individual plan for access. It enables users to receive loans of assistive devices covered by the plan without having to apply for them in the regular way (NSH 2004). If successfully implemented in the municipalities, it is also supposed to increase information about new products and improve access to services. The objective behind the reform was simplification of access; users entitled to the plan can contact suppliers or the county ATC directly. New assistive devices will be lent to them hopefully on shorter notice, as long as an appropriate price for the device has been negotiated and it is included in the national assortment. This reform has made the system more user-oriented and more flexible for active and competent users. Seeing the reform in a historic perspective, however, the changes actually came to resemble the situation as it was *before* the reorganization of the system in 1994 (interview with ATC leader and supplier).

Questions of aesthetics and design are a challenge for the Norwegian public provision of AT. One of the leaders in the NIA phrased it like this: 'Yes, to choose a chair is a challenge, because most people want one chair that covers all needs. It is not possible. The all-in-one chair has not yet been made. One has to compromise a bit' (Informant 1, NIA). ATCs pay some attention to users wanting a specific wheelchair model or specific colours. But as the system shall be driven as rationally and effectively as possible, and as they have their own local and restricted standard assortment, the ATCs might choose to deliver another chair or one in another colour: 'When it comes to colour we've been quite restrictive, well at least here. We say that this is our colour. The users must have very good reasons if they want another colour. We prioritize how the devices function' (interview with ATC leader). The service providers know that users react to this, as they might see other designs and colours in catalogues, at exhibitions or on foreign websites. They also know that the practice might give bias to self-confident and argumentative users. The rigid system was supposed to be eased by the introduction of the 'user's pass' reform, but this reform was also biased towards resourceful users (interview with ATC leader). The government has seemingly placed itself on the same side as users, but users do not see the government as an ally as it has been too reluctant to give them more choice and control, especially regarding aesthetics and design.

### How do users of assistive technologies think of wheelchair design and hearing instruments?

Unsurprisingly, users of AT are by no means indifferent to what product they get. The devices, even when it comes down to the smallest knots and screws, are 'loaded' with feelings, meanings, traditions, cultural values and symbols (Woods and Watson 2004b). This is partly because expressing identities is important to all. The concern with symbolic meanings of belongings and the use of objects to create a sense of self and identity is part of this identity formation (Hocking 2000). In many 'similar'

marketplaces, such as for bicycles, glasses, cars or clothes, aesthetics and design of products means a lot when it comes to identity and self representations.

For most people in the Western world, objects are mirrors of identity. 'To have is to be', as a British psychologist phrases it (Dittmar 1992). She has explored the link between identity and possessions in Western culture using a social constructivist approach. Hocking has elaborated on this, and states that 'using objects in modern times hold and express personal and social meanings, including one's sense of self and one's identity' (Hocking 2000, 25). In times where individual taste, choice and consumerism are more important than ever, the body has become a site of struggle for distinction (Bourdieu 1984; Giddens 1994). To place AT within the health care system make users passive, frustrated and bitter (Ratzka 2003). They not only lose control, but choices with regard to identity formation are also being limited. The AT market is also a source for identity formation and strategies of distinctions that go beyond mere functionality. The disabled body is also a key site for cultural intervention.

In what follows, I will elaborate on the discussion by Dittmar (1992) and Hocking (2000) about what products do to people's identities. How do they think the technology transforms their identities? How do they want it to represent them? Are they at conflict with the patient role or not?

Before this elaboration, a small discussion on the term 'identity politics' is needed. Identity politics is usually defined as 'claiming one's identity as a member of an oppressed group or marginalised group as a political point of departure' (Woodward 2002, 24). However, many researchers in the area of feminism and disability have been concerned about the difficulties that arise when viewing women or disabled people as comprising undifferentiated unitary groupings (Wendell 1996; Fawcett 2000). By drawing from feminist perspectives and feminist discussions about identity politics, we learn that there are (at least) two positions regarding identity within the women's social movement; one essentialist claiming that women have a common identity and unique qualities quite different from others (i.e., men); and another non-essentialist position, claiming that women have fluid identities that are not fixed for all times (Woodward 2002). Describing disabled people or women as a social group might ignore and make invisible differences among them (Wendell 1996). People in wheelchairs might see some similarities between themselves and people who are hard of hearing, but still claim that they have little in common. Being disabled might not be the most important aspect of a person's identity or social position (Watson 2002). Thus identity is here used in a post-modern perspective, as dynamic, plural and derived from multiple sources (Jagger 2002).

To begin with, all the interviewees have something in common. They all stated that the room for individuality and personality is very slight when it comes to the public provision of AT. The main concern within public provision is the malfunctioning of your body, the wrongs. This is also the case in other countries, such as the UK, where the 'priority for each patient clearly is the clinical need rather than aesthetic appearance' (Sapey, Stewart, and Donaldson 2004). However, people do struggle in order to get a better match between themselves and the device:

> If I am going to have a new product, it is not because I want a new product, it is because I need it. The question then is, how strong is my needs. Is the product nice to look at and does it cover my needs? Then I would be very happy. If the product covers my needs, but is not so nice to look at, then I would be more reluctant … Then the product might end in a drawer or in a box. (Brian, a young user of hearing products)

> For many wheelchair users functionality comes first. Then it is important that it looks well. You are lucky if those two fit together. Therefore I want to see the whole selection, to pick a bit of Invacare and a bit of Handicare. I want the chair to fit me. It must be made for me only (...) I will not wheel out of here in a weird colour that you think is cool, that you mean I can sit in. It's only me who knows that, only me. I don't tell other people what shoes they ought to buy. (Thomas, a young user of manual wheelchairs)

Brian and Thomas can stand as an example for all the other interviewees when they emphasize that the products they use are very important body parts. For Thomas it is an extension of his body, it is his legs. Brian said: 'It is supposed to be a part of me. It is very important. The same goes for wheelchairs. It is not just any bike, it is more personal, isn't it?' What is very important is that the product must not make people feel less normal or more disabled than they are:

> That is how it becomes with some of the aids, it feels like having a big clumsy thing on you, you lose your self confidence more than if it had been a fancy product. It should be something you are proud of showing to others.

Likes and dislikes are very much dependent on and vary with gender, age or lifestyle. Many people (and my interviewees as well) abandon assistive devices, dismantle them and keep them in closets because they are not satisfied with the design. The products mismatch and make them lose their self confidence, feel uncomfortable or are unfitted for their age, sex or lifestyle. Abandonment is of course one choice. If they do not abandon the products, how do they cope? Do they conform with or oppose it? Important questions are what users do with the product, how they talk about it, how they wear it, alter it and what products they wear/use and for what reason. One thing is for sure: users have different interpretations and priorities. They use and talk about their technologies differently. All this contributes to the social shaping of the technological product and the identity politics of people using AT.

**Transforming identity temporarily and unwelcomingly**

The six wheelchair users all need electric and/or manual wheelchairs in order to move around. In spite of this, one of them, Anders, a young man in his thirties, insisted on using crutches. To him, the aesthetics and the functioning of his crutches were more important. He did not bother to have a smart wheelchair. He had a standard folding manual wheelchair to use at airports, shopping centres, university, cafeterias and cinemas. Besides, he used his car often and was actually more dependent on his car. He had long resisted using a wheelchair even though he several times had been offered one. As he did not look upon himself as disabled, using a wheelchair symbolized permanent disability to him. The wheelchair was an unwelcome 'stand-in' object, transforming his identity as non-disabled to disabled temporarily in places where he could neither use his car nor his crutches. He didn't care what looks the wheelchair had, if it looked worn out or not. He had no personal relationship to it and he looked upon it as a stigmatized means of transportation. Having a smart wheelchair would signal that his disability was permanent. That was a signal he did not like to send. A similar example is when people in need of crutches permanently are unwilling to get hold of nice aesthetic crutches. Worn out crutches and wheelchairs in this 'patient' market symbolize temporality, independency and non-disability ('normality'). Aesthetic devices and smarter designs symbolize permanence and dependency. This is because patients seldom get the coolest devices from public

services. In car markets it is the other way round; if you need to hire a car temporarily whilst your own is in a garage, you always get a cool one.

The discourse reflects the dominance of medical approaches. Being dependent on crutches and wheelchairs has traditionally been viewed as a personal tragedy and should be avoided. In this respect, Anders' strategy was to get a smart car, smart crutches but a worn out wheelchair. His strategy was to pass as normal, or as supernormal (Helgøy, Ravneberg, and Solvang 2003).

Another example is Eva, also in her late thirties. She did not want cool hearing instruments and preferred them as discrete as possible. To her, hearing instruments are stigmatizing: 'It is because people might think of you only as a person who is hard of hearing, and not as the person you actually are, who also has a hearing loss. You are composed of more than a handicap'. Like Anders, Eva did not oppose the medical approach of the market in a radical way by using hearing instruments as jewels. She thought that flesh-coloured instruments visualized her disability less than colourful ones. That hearing loss is something to hide and that flesh-coloured instruments are preferable has also traditionally been the message from this market.

**Transcending identities**

In contrast, the other five wheelchair users said that a wheelchair is a very personal matter. It is something you wear, as Louise (68) explained very well: 'I dress my wheelchair every morning. I am not "chained" to it … I am dressing it'. The aesthetics of the wheelchair are very important: 'Sometimes it is even more important than its functionality'. Thomas said that he would probably not use the chair if he was not given the choice to decide its design and composition down to the smallest detail. He wanted the chair for outdoor use as stripped (without hand brakes, push handles or arm rests) and with as clean lines as possible. He wanted a chair for really rough outdoor use, like a mountain bike.

His choice was a sporty black manual active chair for outdoor use and at work, and another, but differently designed (from another company) manual chair at home. His only vanity was the rims for outdoor use. After several years he had found *his* rims on the internet. He had bought them himself as they were not available through public services, nor was there any information about them: 'When I found the new rims, I sat down in another similar wheelchair without those rims. I looked at it and thought that yes, this is me, this is definitely me much more than before'. The rims were black and aesthetic, like car rims. One of the rims was decorated with a miniature silver skull. Together, the wheelchair and the person 'radiated' strong powers.

To Julie (50), her manual and electric wheelchairs are as important as pairs of shoes are to non-wheelchair users. When I asked Julie to explain this, she said that she wanted her wheelchairs to be neutral, black or grey all over. She wanted her chairs to match her clothes, just like shoes do. She did not want her wheelchairs to come in 'screaming' colours or in several colours. If they did, it would be terrible and she would personally redecorate it in black immediately. She did not want people to pay attention to the wheelchair, but to her. She wanted people to have a nice impression of her body. The manual wheelchair was more important to her than the powered one as it signalled less dependency. In addition, it was smaller and easier to manoeuvre indoors than the electric one. She used the manual indoors and the

electric outdoors. She never used the electric chair indoors. If that happened, she 'would feel like an elephant in a glass house', she said.

In sum, both Thomas and Julie now felt that the wheelchairs represented them and their identities, after years of struggle with service providers. For all my interviewees it took several years and many struggles to get a good match. In the first place it takes time to get used to a wheelchair or a hearing instrument. Secondly, it takes time to get what one needs from the service providers. Thomas said: 'I understand if people get tired after a year. As I said, I still struggle after ten years. After ten years I still struggle with cushions and things. Really, I shouldn't spend more than a minute on this'.

The majority of the service providers are not customer-oriented, as Henriette, having lost her hearing as an adult, put it:

> It should be the doctors informing us. My impression is that it is the users who are the experts. It is we, the users that find out about things, we are finding out stuff. It should really have been the other way round! If you don't find out for yourself, you don't get to know anything! (Henriette, 45)

Jan, a man in his forties and a user of electric wheelchairs, had experienced a change in his life when I interviewed him. The change occurred when he got a new powered wheelchair. The shift of chair changed his identity and his relationship to the chair. Previously he could not distinguish between his body and his chair. He used to have a very big powered wheelchair in which his body became very small. When he shaved himself, he could only see whether he was shaved or not, he could not see the match between his body and his chair. Now he had a new black and much smaller, smarter chair designed as an office chair. People told him now: 'When they see me, they see me and not the chair. Before it used to be the other way round, the chair was so much *bigger* than me'. Getting a new chair had given him a new consciousness of himself. The distinction between his body and the wheelchair became clearer. He had become more attractive. Its new smarter design had transformed and transcended his identity.

Brian, a young man in his twenties, uses a flesh-coloured behind-the-ear product. Most of his life he had worn a hearing instrument that was as invisible as possible. He had also tried to avoid wearing it at all. Now he was ready to try on a more colourful product, such as a metal coloured one. He had matured, he told me. He reckoned that the product would be visible anyway, being flesh-coloured or not, as it had to be behind the ear, so why not have a colourful one? Another reason he referred to was that so many people wear ear technologies today: 'It is more accepted to wear a silver-coloured product, like a blue tooth headset'. Brian thought that it would be cool to wear a silver-coloured product. He wanted a product that expressed his identity, as a busy young hard-working man with great knowledge of technology, modern digital hearing technology included.

Tom, a 23-year-old man, had just started to wear hearing instruments on a permanent basis even though he had long had a hearing loss, in fact since he was a child. Previously he wanted them always to be flesh-coloured, but now he had come out of the closet. Something had changed with him too. His new hearing products were coloured in black and silver and he was very happy with them. I asked him: 'So the flesh colour isn't so important any longer?' He answered that he associated these with old age: 'No, now I'm thinking that they look like instruments for retired people. Before I used to think that this is how it is supposed to be. Now I think that the instruments I have now are more youth appealing'.

In sum, the choices of these users exemplify users being in opposition to the discourse of the medical model; they are all more or less recasting the assistive device out of its clinical functional limitations, and towards senses of self and social identities in a cultural context.

### The position of the user, technologies and identities

In the Norwegian market the link between designer/producer and end user is weak. Users are not partaking in the design process. This is a paradox as many companies in the first place were established by disabled people themselves, both in Europe (Küschall) and in the US, such as Quickie (Karp 1998). This has of course contributed to better design of wheelchairs. Although changes towards better design have been implemented since the 1980s, the position of users still seems to be marginal. In my view, it is more the voice of the welfare state and the tendered services of the big oligopoly companies that are etched into the devices, and less the voice of the individual (end) user. The welfare state is apparently siding with users, but echoes to a great extent the design approaches of the big companies. Together they have the greatest say with regard to design and innovation.

The problem is that this might hamper innovation. Individual choices, expressions of dissatisfactions on aesthetics or conformist passive consumer attitudes are not reaching those who are in a position to move new designs off the drawing board. Small producers eager to innovate find it hard to survive in such a climate (Karp 1998). The pattern is that small producers are being swallowed up by the bigger companies, such as the German company Sopur, bought by Sunrise Medical in 1992, or Küschall that is now part of Invacare. Despite the digital revolution in hearing technology, for instance, the market for AT has seen a slow development with regard to design, except for the last five years or so. The overall message from the marketing of hearing instruments in many countries is that hearing instruments unfortunately are 'noise' on your personality and that hearing loss is something to hide and be kept as invisible as possible – as this commercial illustrates:

> We would all like a hearing instrument that was completely invisible. ReSound Plus5 is the next best thing . . . it can be fitted with a clear, flexible thin-tube that follows the contours of the ear and is virtually invisible. . . . (http://www.gnresound.co.uk/resound_plus5_instruments.aspx)

The overall message from the marketing of wheelchairs is similar; an answer to a bodily shortcoming, a physical problem to be repaired. The commercials address professionals, not users, and they have an impersonal, technical and functional approach. The devices are socially constructed as medical, and are part of medical care and practices that play a major role in defining disability (Wendell 1996). It is not easy for individuals to oppose such strong forces in a market, especially when there is no structural link between end users and producers.

The position of the user, seen from a technological point of view, is very important. The more influential the user, the more his or her views will become materialized into the technical design of the new product (Akrich 1992; Rose and Blume 2003). The social construction of the wheelchair is a good example. It illustrates how the position of disabled users traditionally was a marginalized one. Historically, manual wheelchair design has developed and changed from being a wheeled chair designed for the helper, to slowly becoming designed as a wheelchair for the user (Woods and Watson 2004a,

2004b). The history of the ultra-light manual wheelchair also illustrates how design reflects the position of its potential users. Wheelchairs and hearing instruments can change. But design is to a great extent dependent on designers and many other participants who distribute and promote consumption. It is they who attach particular meanings and lifestyles to products (Bourdieu 1984).

Public service provision orientates itself at providing equipment that apparently is unisex, standardized for all ages and lifestyles. The main focus is people's 'clinical' needs, emphasizing technology, bodily limitations and functionalities. Most of the interviewees struggle with this approach. Some people with hearing impairments look upon their hearing instruments not as something to be hidden, but as something to show to others; as a piece of jewellery. Wheelchairs are for some equally important; as pieces of clothing, as pairs of shoes or as extensions of the body. The wheelchair becomes in fact *rollwear* as cars are, and hearing instruments *hearwear* in the same way as glasses are eyewear.

Design and aesthetics are important aspects of technology. Industrial design can be defined as an inter-play between aesthetics, ergonomics, technology, economy and market. It deals both with the functionality of a product as well as its appearance. It also includes responsibility for the effect of the product design (Farstad 1998). Not only that, design can also be seen as a special form of *human communication* (Wilson 2002). When new technologies are being created, human experience is recreated. Technologies make changes to what we do, how we do it, and what it means to be human. Technology shapes and defines the agency of women and men (Latour 2002). The machines that surround us are cultural objects important for identities. They can develop and transform identities (Latour 1992; Akrich 1992). Technologies are 'crucial tools recrafting our bodies', able to 'enforce new social relations' (Haraway 1991). Computers, mobile telephones, glasses, wheelchairs and hearing instruments are all 'prosthetic devices', 'intimate components' or 'friendly selves'. In this perspective, devices such as glasses, hearing instruments, wheelchairs and other products are important, reconstituting not only embodiment, but also skill, gender and sexuality. Our bodies do not end at the skin. Our bodies transgress our skin by the means of technology.

This matter has also been emphasized by Dutch and Norwegian researchers who have introduced the concept of 'genderscript' into the study of technologies. Their argument is that genderscript depicts representations of masculinities and femininities in technological artefacts and that technology invites or inhibits specific performances of identities, such as gendered identities and relations. Designers of technology do not work in a black box. They always try to anticipate preferences, motives, tastes and skills of potential users and the cultural norms in society at large (Oudshoorn, Saetnan, and Lie 2002). Despite this, people always tend to see objects as socially neutral, or as in this case with wheelchairs and hearing devices, as unisex. I asked all the wheelchair users whether they wanted more gendered products, like a wheelchair specially designed for women, or if they knew of such products. But they all thought of their chair as more or less unisex. The eldest woman – Louise (68) – was, however, convinced that powered wheelchairs are gendered. When I asked her to explain this she said: 'Of course it is gendered! All of them are masculine. They are all big and monstrous, and fit best a man! To put a slender lady in them is wrong. There are small wheelchairs, but they do not have the same quality'. Jan had actually found a smart and small powered wheelchair that emphasized his personal style in a much better way than the old one, so for him too it was difficult to get a good match. The

same goes for manual wheelchairs. Again, only one of my female interviewees had given this question a thought as she associated Küschall manual chairs with masculinity and Quickie with femininity (Monica, 29). Louise on her side had altered her powered chair to perform her female needs better. She had made a chamber in her chair on the side in order to keep a small make-up bag as well as for keeping keys and money safe. In addition she had rebuilt the side guard so that it could flip up and down, enabling her to move her body onto her bed, a chair, or the toilet seat on her own.

Wheelchairs and hearing instruments do express gendered identities. It is my impression, however, that they embody kinds of masculine identities more than feminine. An explanation of why wheelchairs and hearing instruments are more masculine might partly be because there are more men than women using these technologies in the world due to wars and/or sports/traffic/work accidents. Secondly, but connected to the first, is that disabled women have had a less powerful voice in the market. There are also fewer female industrial designers and even fewer of them use wheelchairs or hearing devices. Thirdly, it is or has been more difficult to design small electric chairs or small alert devices due to the size of the motor or the technology that has to be inside. However, there is always a representation of users when a new product is to be designed. These representations become materialized into the design (Akrich 1992; Oudshoorn, Satnan, and Lie 2002). People struggle to modify or change their assistive devices in order to express their identity. Reading powered wheelchairs as genderscripts, many of them inhibit feminine performances exemplified by lack of space for make-up accessories as well as lack of a slender feminine style. This also goes for alert devices. Lisa was annoyed with a wireless alert system that had been designed as a modern watch. She found the watch unpractical for her, as it was designed as a big masculine black watch. Her question was why they had not designed the alarm system as a ladies watch, too. When I interviewed her, this had just been done by the company, but it wasn't designed as a watch any longer. It only resembled one, as a 'thing' to be worn on the arm by women. Lisa said:

> It has to do with appearance and design. It does something to you. Maybe you should be satisfied, but you are supposed to live with it every day. You get visitors, people coming and going in and out of your house, how do they think of you? It is the feeling of well-being...

As we have seen, gender issues might not be the most prevalent issues for people as personal style, age and lifestyle are important too. Many alert devices have traditionally been made for older people, an example being flashing red lamps or ice-bears. This obviously does not appeal to young men or women in their twenties like Brian or Tom, wanting to decorate their flats in a clean, funky style. Brian said that he had refused to install an alert device even though he needed it: 'In the flat where I live now, I have not installed it because it is not possible to have such ugly boxes all over the flat. It is still packed, lying nicely in the original box'. As a young man with a clean style, he distanced himself from installing a device that was supposed to (in his opinion) appeal to his grandmother.

Julie's chair, and especially her manual chair, represented her femininity, ability and personal style. The language Julie used when she talked about the design of her chair was the language of dressing: 'My chairs are tailored around my body'. Julia and Thomas said that to borrow other chairs as one has to do at airports or shopping

malls, was like using someone else's shoes. While Julie wanted her chairs to be small, lightweight, and nice and elegant to look at, reflecting her personal style as an active and well-dressed woman, Thomas wanted his wheelchair to be clean and easy, but sporty, rough and tough, signalling strength and courage, like a car. His language was slightly different, comparing his wheelchair to mountain bikes and cars more than with clothes, thus reflecting his identity as a very sporty man.

Henriette (45) and Lisa (24), being hard of hearing, wanted to change the representation of themselves and their style on a day to day basis. They wanted to have the opportunity to change the colours of the earplugs. One reason was to distinguish daily life from party life or, as Henriette said:

> I think there should be a choice for us grown-ups, and then I really mean grown-ups and teenagers as well. There should be more fancy things, in the same way as you wear a necklace, a ring or earrings or whatever. Why isn't it like that with hearing instruments?

It was actually Lisa's private audiologist that in the first place had convinced her to try blue earplugs on. Lisa was very confident with her audiologist and found her services very customer-oriented. This citation is very different from what Henriette experienced, regarding doctors being too little customer-oriented. Lisa said about her private audiologist:

> She knows me, she knows what I want, how I like it, what I want to get during a day, what sounds are good for me, what sound do I catch up, what do I not catch up. When I went to school, I could just pop in her surgery after school. Then they said to me: 'Can you wait for ten minutes or half an hour?' Or they said 'It is a bit busy now, can you come back tomorrow or the day after?'

She agreed with her audiologist to try the blue earplugs on because she had an idea that they might match her clothes. She said: 'I use a lot of blue clothes, yes. So I thought why not try on a blue earplug'. In addition, she had her plugs decorated with nice looking stones and received many positive comments on her new look from family members, colleagues and friends. Henriette had for several years struggled to get a white-coloured hearing instrument designed with stars, as diamonds. In the first place she was told by the service provider at the hospital that this was for children only. She did not accept this and did not give in before she got it after several years of fighting the system. Tom (23) tells the same story. He had to fight to get the black and silver-coloured ones, not because they were brand new on the market or because of their aesthetics, but because he could simply hear better with them. He also told me that he actually found them himself on the market and had more or less bypassed the hospital in order to get them.

The AT market can be described as a rather disconnected and slow market regarding the matching of gender, age and lifestyle with aesthetics and design. Disabled women and young men in particular seem to have less choice. The companies seldom make designs targeted for women or young men in particular. The problem at stake here is that this restriction of choice and discrimination is blessed by the welfare state. Some, including my interviewees, might take the opportunity to be active in their own self-fashioning and alter their chairs to perform better, or fight the system to get a decorated hearing instrument or a smarter looking wheelchair, but they cannot change the system. Some do not alter but conform to or accept this invisible consumer discourse that informs them that their body is inferior.

### How far is market provision the answer?

How far is the market an answer to this rigid and restricted public service provision, and how can public services become more responsive to users? Firstly, tender agreements seem to have hampered introduction of new designs. This problem needs to be resolved. On the other hand, more market provision might not solve the existing tension regarding choice and equity, but it can empower users nevertheless. A prerequisite is that public services become more flexible and consumer-oriented by paying more attention to users' concerns, needs or wants as well as by listening not only to those who shout the loudest (Clarke et al. 2007). If users get a bigger and a *real* say in the design process of AT, suppliers probably get more responsive too, and the missing link between user and suppliers/producers might get re-linked. If users get information and learn about the 'logic' of service provision, more realistic and reasonable expectations might be constructed from the user's side too.

Using objects, whether 'medical' or not, are symbols of identity, of shared beliefs and of values. A consumerist approach emphasizes that expanding choice to active consumers of public services will enhance equality (Clarke, Smith, and Vidler 2006). Through consumption and choice – consumer power – women can, for instance, be provided with important resources that can empower and enable them to become embodied feminine subjects. In this respect, consumerism might be a 'progressive challenge to producer domination and bureau-professional paternalism' (Clarke, Smith, and Vidler 2006, 17). A shift in service orientation from patient to customer and a shift in 'governmentality', to speak of Foucault, could contribute to facilitating societal processes directed at reconstituting disabled bodies as active agents and not as 'inferior bodies stripped of agencies' (Paterson and Hughes 2002; Oliver 1990). This is not to say that greater consumerism solves all problems. We cannot take for granted that the interests of users coincide with the interest of producers (Newman and Vidler 2006). Consumerism can also be viewed as having limitations, if seen as a regressive individualization narrowing collective democratic engagement (Clarke, Smith, and Vidler 2006; Clarke et al. 2007). Consumer culture can be a site for identity politics, but it can also be argued that this is a displacement or subordination of politics (Bauman 1998). If women's bodies, for example, continue to reflect patriarchal norms and aesthetic codes of 'femininity' rather than expressions of a self determined individuality (Jagger 2002), the consumer approach might not be adequate. However, the nature of consumption as being able to empower, as this article touches upon, must be taken into consideration. In addition, the tendency of consumerism to reproduce inequality must also be considered. This double-edged nature of consumption raises important questions regarding the role of the welfare state and the way public provision of AT should be institutionalized in the future.

### References

Akrich, M. 1992. The description of technical objects. In *Shaping technology/building society: Studies in sociotechnical change*, ed. W. Bijker and J. Law, 205–44. Cambridge, MA: MIT Press.

Anderberg, P. 2006. *FACE*. Disabled people, technology and Internet. PhD thesis, Certec, Division of Rehabilitation Engineering Research, Department of Design Sciences, Lund University.

Barron, K. 2002. Who am I? Women with learning difficulties (re)constructing their self-identity. *Scandinavian Journal of Disability Research* 4, no. 1: 58–79.

Bauman, Z. 1998. *Work, consumerism and the new poor*. Buckingham: Open University Press.

Bourdieu, P. 1984. *Distinction: A social critique of the judgement of taste*. Cambridge, MA: Harvard University Press.

Breivik, J.-K. 2005. *Deaf identities in the making*. Washington, D.C.: Gallaudet University Press.

Clarke, J., J. Newman, N. Smith, E. Vidler, and L. Westmarkland. 2007. *Creating citizen-consumers. Changing publics and changing public services*. London: Sage Publications.

Clarke, J., N. Smith, and E. Vidler. 2006. Consumerism and the reform of public services: Inequalities and instabilities. *Social Policy Review* 17: 167–82.

Dittmar, H. 1992. *The social psychology of material possessions. To have is to be*. Hemel Hempstead, UK: Harvester Wheatsheaf.

Farstad, P. 1998. Design i produktutvikling [Design in product development]. In *Innovasjon* [Innovation], ed. J.M. Dervå. http://www.innovasjon.no/aktuelt/design.html.

Fawcett, B. 2000. *Feminist perspectives on disability*. Harlow: Pearson Education.

Garland Thomson, R. 1997. *Extraordinary bodies. Figuring physical disability in American culture and literature*. New York: Columbia University Press.

Giddens, A. 1994. *Beyond left and right*. Cambridge: Polity Press.

Haraway, D. 1991. A cyborg manifesto: Science, technology and socialist-feminism in the late twentieth century. In *Simians, cyborgs and women: The reinvention of nature*, ed. D. Haraway 149–81. New York: Routledge.

Helgøy, I., B. Ravneberg, and P. Solvang. 2003. Service provision for an independent life. *Disability & Society* 18, no. 4: 471–87.

Helgøy, I., B. Ravneberg, P. Solvang, and I. Lundberg. 2001. Tjenesteyting for et selvbestemt dagligliv. Funksjonshemmede mellom individuell frihet og byråkratisk regulering [Service provision for an independent life? Disabled people between individual freedom, professional judgement and bureaucratic regulation]. SEFOS-report no. 9, University of Bergen.

Hocking, C. 2000. Having and using objects in the Western world. *Journal of Occupational Science* 7, no. 3: 148–57.

Jagger, E. 2002. Consumer bodies. In *The body, culture and society. An introduction*, ed. P. Hancock, B. Hughes, E. Jagger, K. Paterson, R. Russell, E. Tulle-Winton, and M. Tyler. Buckingham: Open University Press.

Karp, G. 1998. *Choosing a wheelchair. A guide for optimal independence*. Sebastopol: O'Reilly & Associates.

Latour, B. 1992. Where are the missing masses? The sociology of a few mundane artefacts. In *Shaping technology/building society*, ed. W.E. Bijker and J. Law. Cambridge, MA: MIT Press.

Latour, B. 2002. *Aramis, or the love of technology*. Havard, MA: Harvard University Press.

The National Insurance Administration (NIA). 2003. *The provision of assistive aids – part of a larger system*. Oslo: Assistive Technology Division.

Newman, J., and E. Vidler. 2006. More than a matter of choice? Consumerism and the modernisation of health care. In *Social policy review*, ed. L. Bauld, K. Clarke, and T. Maltby, 18. Bristol: The Polity Press.

Nordic Cooperation on Disability (NSH). 2004. *Provision of assistive technology in the Nordic countries*. Solna, Sweden: Atta. 45 Tryckeri AB.

Oliver, M. 1990. *The politics of disablement*. London: MacMillan Press.

Oudshoorn, N., A.R. Saetnan, and M. Lie. 2002. On gender and things: Reflections on an exhibition on gendered artefacts. *Women's Studies International Forum* 25, no. 4: 471–83.

Paterson, K., and B. Hughes. 2002. Disabled bodies. In *The body, culture and society. An introduction*, ed. P. Hancock, B. Hughes, E. Jagger, K. Paterson, R. Russell, E. Tulle-Winton, and M. Tyler. Buckingham: Open University Press.

Ratzka, A. 2003. *From patient to consumer: Direct payments for assistive technology for disabled people's self determination*. Stockholm: Independent Living Institute.

Rose, D., and S. Blume. Citizen as users of technology: An exploratory study of vaccines and vaccination. In *How users matter, the co-construction of users and technology*, ed. N. Oudshoorn and T. Pinch. Cambridge, MA: MIT Press.

Sapey, B., J. Stewart, and G. Donaldson. 2004. *The social implication of increases in wheelchair use*. Lancaster University: Department of Applied Social Science.

Scherer, M.J. 2002. *Assistive technology. Matching device and consumer for successful rehabilitation*. Washington, DC: American Psychological Association.

Somers, M.R. 1994. The narrative constitution of identity: A relational and network approach. *Theory and Society* 23: 605–49.

Watson, N. 2002. Well, I know this is going to sound very strange to you, but I don't see myself as a disabled person: Identity and disability. *Disability and Society* 17, no. 5: 502–27.

Wendell, S. 1996. *The rejected body. Feminist philosophical reflections on disability.* New York: Routledge.

Wilson, J. 2002. Communications artefacts: The design of objects and the object of design. In *Design and the social sciences: Making connections*, ed. F. Jorge. London: Taylor & Francis.

Woods, B., and N. Watson. 2004a. The social and technological history of wheelchairs. *International Journal of Therapy and Rehabilitation* 11, no. 9.

Woods, B., and N. Watson. 2004b. Wheelchairs as political machines. Paper presented at the Healthy Innovation Workshop, July 8–10, at the University of Manchester.

Woodward, K., ed. 2002. *Identity and difference.* London: Sage.