

ETHICAL IMPLICATIONS OF DESIGN PRACTICES. THE CASE OF INDUSTRIALLY MANUFACTURED PATIENT CLOTHING IN FINLAND.

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In the following paper, we describe the actors and practices influencing the design of patient clothing in Finland. We also discuss the ethical issues that can be identified in the design process and in the decisions made in the process. In our data, designing patient clothing is represented as a highly complex net of conflicting needs. According to our findings ethical issues in patient clothing design were associated with ethical principles of efficiency, beneficence, privacy and autonomy.

INTRODUCTION

When doing fashion design in the industrial context the designer has to take into account the design process and actors involved in it, the process of industrial manufacture, the viewpoint of sales and marketing, buyers, the context of use, and the physical and psycho-social needs of clients and users (Iltanen 2007). These aspects equally apply to designing patient clothing used in care environments. However, there are features in designing patient clothing that are special compared to other areas of fashion design or industrial design in general.

In countries such as Finland, clothes for patients and

clients are provided by acute care hospitals and residential care institutions—services that are mainly financed by public authorities. This originates back in the 19th century when there was a need to improve hygiene in hospitals and to provide adequate clothes for poor patients. The current system of designing, using and maintaining patient clothing began developing during the 1960s and 1970s, and has remained rather static since. However, existing types of patient clothing are further developed, and new types are gradually being designed.

By patient clothing, we refer to a variety of products provided by the care institutions, worn by the patients close to the body, and made of textile material or the like (i.e. leather and non-woven materials). The types of products we include as patient clothing are garments, footwear, “supportive devices” to support the position of the body and to prevent accidents, and “protective devices” to protect the user or his/her environment from soiling. In this article, footwear is not discussed.

Patient clothing is an overlooked topic among clothing and fashion studies, design studies, as well as studies of the care environment. There are some projects and studies on patient clothing and/or clothing for people with special needs (i.e. Benktzon, Edgren, Böhme, & Sääf, 2003; Karkulahti, Iltanen, Kokkola, Östergård, & Hallman, 1999; Nevala, Holopainen, Kinnunen, & Hänninen, 2003; Sperling & Karlsson, 1989). These studies are mainly fairly small-scale research and development projects. We have not found studies discussing the whole process of designing,

manufacturing, buying, using and maintaining patient clothing. The studies often focus on one aspect of a garment such as development of material technology or pattern making. They usually discuss the needs of a very specific user group or an individual user, and seldom focus on an industrial context. The scope of previous studies has usually been on the possibilities for development rather than studying existing practices.

AIMS

In the research project “Close to the body”, our aim is to study the present-day reality of industrially manufactured patient clothing. In the previous phases of this research project, we have conducted a survey addressed to designers to chart the basic facts about designing and manufacturing patient clothing in Finland. We also have studied the patient clothing found in brochures published in the internet, and discussed possible factors behind the design of patient clothing (Iltanen & Topo 2005a; Iltanen & Topo 2005b; Iltanen & Topo 2006).

In this paper, we focus on the practices influencing the design of patient clothing in Finland as they are described by the experts involved in the design process. To address this issue we ask: Who are the actors influencing the decisions made during the design process? How do the experts involved in the design process describe the practices of designing, selling, buying, using and maintaining patient clothing? What are their roles in the process? What ethical dimensions and issues can be identified in this process and in decisions concerning patient clothing?

Even if our study focuses on a single country and a rather limited design area, it can be assumed that there are similarities with other western countries using patient clothing, other fields of industrial design and design of clothing for purposes of institutions rather than individual consumers. We will discuss our findings in a framework of actor network theory which has been developed to analyze the social shaping of innovations and technologies (Law & Hassard 1999).

MATERIAL AND METHODS

This article is based on interviews of designers (n=8), experts on industrial laundry (n=2) and an expert on buying patient clothes for care institutions (n=1).

The interviews with designers were conducted in two parts. In the first interview, we asked the designer to choose a garment or a set of clothing from among their work. We asked them to choose a particular type of patient clothing due to our research interests. The set of samples includes seven garments or sets of clothing: pajamas, a dressing gown, a sweat suit, a dress, safety pants, hygiene overalls and a safety vest. If there were several possibilities to choose from, the designers were advised to choose the garment that they think represents good design in the context of care environments. In the second interview, designers assessed each others' samples. The experts on laundry and buying assessed the designers' samples as well.

The data were analyzed by using Atlas.ti -program and by thematic analysis. The analyzed data was interpreted against the results of studies discussing industrial design, practices of care, and ethics of design and care.

The pictures shown here have been published in the on-line catalogues for marketing patient clothing. They do not represent the exact items analyzed in the study, but aim at giving an impression about the type of the product.

FINDINGS

Design and development. According to the interviews, designing patient clothing begins with acknowledging the need for development. The need may be pointed out by other experts working within the purchasing system, maintenance or care work. Based on our data, patients virtually never express their wishes for improvements directly to the designers. Their views are mainly filtered through the care workers or experts on buying or laundry acting as intermediaries at this stage.

The next step in the design process of patient clothing is to gather information of the various needs involved in using and maintaining the garment. Usually at this stage the designers visit care institutions and ask the care staff about their needs. Sometimes patients themselves are also interviewed, but this occurs more seldom and their view is usually interpreted by the care staff. The experts designing patient clothing seemed to be fully aware of the requirements the industrial laundry sets for design, and at this stage the laundry is usually not consulted. The needs that have to be met in the design of patient clothing are contradictory, and the designers describe the process as being a set of compromises.

Earlier we have found that designing patient clothing is carried out by teams in most cases (Iltanen & Topo 2005a; Iltanen & Topo 2006). In the interviews the experts described designing patient clothing as multiprofessional group work. Only two of the designers interviewed for this study had a degree in design or similar. Others were experts in marketing, manufacture or care work. The interviewed experts claimed that “ordinary” designers are unable to do this work due to the special knowledge required. In Finland, there is no training for designing patient clothes, despite some small and occasional projects as part of the education of fashion designers.

In mainstream fashion design, there may be eight or even more new collections per year, each including as much as hundreds of products. According to our interviews, the collections of patient clothing change much more slowly. When looking at the catalogues of patient clothing it seems that there is no or very little variation according to season, and most of the products may have been the same for years (Iltanen & Topo 2006). According to the experts interviewed, designing only one garment may take a couple of months or even years. Typical examples of this are a hygiene overall and hip protectors (see below). The reason for the slow development is the iterative nature of the process. Patient clothing is tested in real life situations in care environments and industrial laundry, feedback is gathered after every phase, and alterations are made according to the suggestions for improvement. Another reason is that designing is usually only one of the tasks of the experts, and other tasks may be prioritized in the hectic working pace.

The longest period of design seems to be the process of standardizing patient clothing. Some of the patient clothing used today was designed and standardized in the early 1970s, and some of these products were renewed in the early 1990s (SFS, 1997). Among the interviewed people, there were two persons that had taken part in the development process of the standardized patient clothes. They report that the reasons for standardizing were to make it more cost-efficient for the industry to manufacture, and easier for the care institutions to buy good quality clothes. The main aim was to design patient clothing that can withstand washing in the high temperatures of industrial laundry and be processed easily through the system of maintenance. However, the people involved in the standardizing process also pointed out that whenever possible, patients' needs were taken into

account. This resulted for example in choosing knit materials for pajamas that adapt to the various bodily features of users and feel soft and comfortable when used in bed.

The clothing standard defines the materials, sizes, the number and quality of buttons and colors used for coding the size etc. Color coding means that for example garments of size S are pink, and garments of size XXL are grey. The standardized garments have remained almost the same since they were first developed in the 1970s and early 1980s. Some of them were renewed in the early 1990s, but at that time no major alterations were made to the design. The manufacturers may use their own prints in and make minor alterations to the technical details though.

The most commonly used standardized patient clothes are pajamas and dressing gowns (see Pictures 1 and 2). They are the main articles used in acute care, and also used in long-term care, together with other clothes designed for institutional use and patients' own clothes.



Picture 1. Pajamas.



Picture 2. Dressing gown.

Industrial manufacture. The industrial manufacturing process is more or less the same in patient clothing as in other areas. There are some manufacturers that produce raw materials for patient clothing and dye them before cutting and sewing, but usually the manufacturers are dependent on external materials. The biggest manufacturers have externalized also the cutting and sewing, but most of the work is still done in rather small factories in Finland. Compared to mainstream fashion designed in Finland, this is exceptional.

In patient clothing the need for individual adjustments according to the various needs of end-users may be greater. Currently the process of industrial manufacture does not provide possibilities for this since mass-customization is not used in these factories. Only some of the smallest manufacturers are able to make individual adjustments in the garments. The technology available at factories has a major impact on the decisions that may be made when designing. For example, if the factory is prepared to sew knitted materials, woven materials cannot be sewn there.

Sales, marketing and buying. The same experts taking part in the design process are often involved in the sales and marketing of patient clothing. Patient clothing is owned by the care institution, or rented from the laundry by the care institution. Therefore, the target for marketing is usually the care institution, or nowadays more and more often the industrial laundry. Based on our material it seems that the majority of purchases are based on earlier experiences of the products of a certain manufacturer, and the same products are bought repeatedly. Most of the sales material can be found in the Internet (see Iltanen & Topo 2005b), and purchases may be done by email or electronic ordering forms. Some of the manufacturers also make visits to the facilities to market and/or sell their products.

Earlier there was a particular professional who was responsible managing of the system of purchases, maintenance and deliveries of patient clothing in the institutional setting. Sometimes this person also developed products to match the individual needs of patients. This kind of expert is nowadays rare in the care institutions. At the moment, the purchasing practices vary according to the institution. The purchases are often done by a team of experts, or this task is combined with multiple other duties of a professional within the care or laundry system. Also

care staff may take part in the buying process, through describing the needs apparent at a ward or ordering the items needed.

Clothes are also sometimes bought with the personal money of the end-users living in long-term institutional care, but they very seldom make these decisions for themselves. Instead, in these cases care staff is often responsible for the purchases. Sometimes also family caregivers buy clothes for their relatives living in long-term institutional care.

For care institutions, purchasing or renting patient clothing is an item of expenditure. Larger amounts of patient clothing are usually purchased after a process of competitive bidding. Compared to the other expenses of care institutions the costs of patient clothing are minimal, but when the budget is tight, these expenses are also minimized. There is a constant effort to lower the costs of health care, and this creates pressure to purchase and maintain patient clothing as cheaply as possible.

This has an effect on designing, since all the small details may make the price of the end-product higher. The experts designing patient clothing are extremely well aware of all the consequences of choosing materials and dyes, cutting the fabric and sewing the garment most efficiently. For example, materials used in patient clothing seem to be very basic polyester-cotton mixtures. New materials may tolerate the industrial laundry system well and benefit the user but these are claimed to be too expensive to be used in patient clothing. The aim of saving money can be seen especially in standardized garments. Their manufacture is extremely rationalized, and the costs of the industrial processes are reduced.

The experts point out that both the price of the garment and the total price including the cost of maintenance and the period of use should be taken into account when buying patient clothes. Many of the experts also make it clear that losses have a great impact on the costs—patient clothes are taken by the patients to an extent that has an effect on the budget.

The amount of people in need of long-term care is expected to rise rapidly due to the growing number of the oldest old in the country. It is likely that this will increase the need for patient clothing, and thus the costs for purchasing and maintaining them.

Institutional care environment. The experts interviewed for this study point out that there are

differences among the care institutions in regard to the needs of patient clothing. In acute care, patient clothing may be used only for a short time, perhaps only a few hours or days. The experts claim that the patients in acute care are focused on their pain or discomfort, and thus only the functional features of clothing are meaningful in this context. Some of the interviewed also make a normative point: in acute care, patients should not care for their appearances since the hospital is a place for getting well in the medical sense. The context of acute care is also discussed in the context of maternity hospitals. According to the experts, the positive context of giving birth or the negative context of worrying about the health of the child usually takes all the available energy and clothes are not important for these women.

The experts see the situation in long-term care as different. For the old people in long-term care, the care institution is often the last home and the clothing provided by the care institution may be their only wardrobe. Also people with cognitive disorders or mental illnesses may be in need of patient clothing for months, even years. The experts describe the residents in long-term care as often very frail and their cognitive, mental, physical and social functioning as low. They claim that the care environment has the potential to improve or in the worst case to hinder the well-being of these patients (see also van den Berg, 2005).

Care staff. According to the experts, providing care such as dressing and undressing is physically straining work and this should be taken into account when designing patient clothing. Nevala et al. (2003) found that by redesigning the garments the physical workload and strain could be significantly reduced and work ergonomics improved.

In the interviews, emotional aspects of the care work were also pointed out. Choosing the clothes for the patient, and dressing and undressing him or her is part of interaction taking place between the care staff and their clients. The experts involved in design suggest that some of these situations may be positive for the care staff and provide a therapeutic aspect for the patient. However, the experts interviewed made comments about the care staffs' superior power relation to the patients. Within the very tight schedules of care work, providing medical care as easily as possible becomes a priority, and the psycho-social needs of patients may become less important for the care staff.

One example of these characteristics is illustrated in the design process of a product called “hygiene overalls” by our informants (see picture 3). The hygiene overalls are used by people with incontinence and difficulties to orientate to time and place. These people have to use incontinence diapers, but do not wish to do so and have a tendency to take off their clothes and diapers in inappropriate situations. The development of this garment started simultaneously in several places in the early 1990s. In our data we have many stories of the process, and they all have in common that the catalyst for product development was the care staff. In one story, the laundry received by accident an early version of hygiene overalls, made of old sheets by care staff. In another story, the manufacturer was asked by care staff to begin to design a particular garment for this need. The reason for the activity of the care staff in this matter seems to be that the hygiene overalls make their work easier. It reduces their work-load by keeping the patients dressed appropriately and not having to clean them up after independent removal of the incontinence diapers.



Picture 3. Hygiene overalls.

There are some well-established procedures in care work that affect the designing of patient clothing. One of these practices is tying patients and preventing them from moving. This is an established part of Finnish care culture and common in other countries too (Kirkevoold, 2005; Pekkarinen et al. 2006). The experts also stated that restrictive devices make the care work easier and the care cheaper for the hospital (compare Wang & Moyle, 2005). One example is the safety vest, used to tie a person in a chair or a geriatric chair (see picture 4).

In the data, the experts discussed the practice of restricting and use of safety vests with very contradictory feelings. They understood that there are aggressive

patients who need to be prevented from hurting others or themselves, and frail people in need of support to be able to stay seated in an up-right position. The experts claimed that the best way to deal with the situation would be to increase the amount of care staff to take care of the vulnerable patients. But this is not possible in the current care system suffering from cuts in the amount of personnel, the experts claimed. Hence, there are only two options: to use medical sedatives or physical restrictive devices. Both of them have negative consequences for the patient. Sedatives were argued to have negative side effects and restrictive devices were seen to hinder people from acting and deciding. The experts favored the practice of using restrictive devices, since that leaves the person with more cognitive capacity.



Picture 4. Safety vest.

Patient as the user. In the data, the most popular subject of discussion was the patients' needs. The experts claimed that the patients' needs should be the priority when designing patient clothing. Simultaneously the experts say that the demands set by the processes of manufacture, buying, care work and laundry often are contradictory to the needs of the patients', and usually dominate in the design of patient clothing. The experts find this situation ethically problematic, but often do not see a way out: it is the institution or industrial laundry that buys the products and thus pays their salaries.

Earlier in the article we have stated that direct contact between the experts of design and patients is rare. Rauhala (2007) has found that even if the designers are not in direct contact with end-users, they have clear images of their needs and the prioritizing of these needs. The experts described the patients living in long-term care usually as very old. In acute care, the

majority of patients are older than 60 years, but there are also younger patients, including children. According to the experts, the patterns of patient clothing differ greatly from patterns used in the manufacture of mainstream clothing. The reason for this is often the sitting position and old age of users. The basis for pattern making should be the E-patterns that have been developed for people over 65 years. Some of the experts claim that recently the weight of the patients has become heavier, increasing the need for larger patient clothing.

The experts describe the users of patient clothing as having problems with health and also with physical and cognitive functioning. In the data, problems with cognitive abilities are referred to in the context of dementia. This issue was discussed earlier in the article in connection to the hygiene overalls and the safety vest.

An example of a product that has been developed to meet medically defined physical needs are the hip protectors (see picture 5). In our data, the hip protectors were designed by a medical doctor, and the design process emerged from the doctor's personal and professional experiences and interests when working in a long-term care institution providing care for old people. The doctor has conducted studies about how efficient the hip protectors are in preventing the users' femur from breaking if the user falls. This is exceptional in our data since no other product has been studied from the medical point of view.



Picture 5. Hip protectors.

According to the experts interviewed in the study, the non-medical psycho-social needs of users are important, and they can be met by the design of patient clothing. The experts claim that an aesthetically pleasing care environment—including the patient clothing—may help in recovering from acute illnesses. By aesthetically pleasing they often refer to bright colors, use of patterns,

fabrics that look clean and tidy, and professionally cut and sewn garments.

For patients in long-term care, maintaining the self-image by being able to express social roles such as age and gender is considered as very important. An example of this is the dress presented in picture 6. This dress is moderated to meet the functional needs of a frail patient. It is open at the back to facilitate dressing and undressing, and to make visits to the toilet easier. At the same time the dress is presented by the experts as providing a positive possibility to express oneself as an old lady of a certain generation. Interestingly, a visually similar dress is discussed in a very negative manner in the context of mainstream fashion design and women at the late middle age. It is talked about as a “granny dress”, a piece of clothing that is considered to be typical for the older generation of women, and seen as insulting when offered to women at any age in our times (Iltanen 2007).

Although the product development process is quite slow in patient clothing, changing habitual norms are taken into account in clothes used in long-term care. One of the changes that is discussed a lot in the data is the old womens' gradual shift from wearing dresses to wearing pants. The experts say that in the late 1990s mainly dresses were bought for old women living in long-term care, but nowadays sweat suits with pants are used more and more by older women too (See picture 7). This reflects the change in the construction of social age of ageing women in general (Iltanen 2005, Iltanen 2007).



Picture 6. Dress for a wheel-chair user.



Picture 7. Sweat suit.

The experts told that they sometimes get very strong critique of the aesthetics of their design from the viewpoint of users. The critique usually does not come from users directly, but is mediated through care staff, relatives and media. Since in long-term care the patients are often unable to speak for themselves, the role of relatives is emphasized. Experts claim that it is often the relatives, shocked by the poor condition by their loved one, who complain about the “dull, depressing and demeaning” aesthetics of patient clothes and also about the use of restrictive devices.

Rauhala (2007) has stated that the critical comments about the aesthetics of medical devices made by the end-users indicate that the end user is not recognised as a person with expressive needs. This seems not to be the case in our data. According to our data, the physical needs are met more often than psycho-social needs in design of patient clothing. In her study on design of assistive technology Rauhala (2007) argues that if there is no direct contact between the designers and end-users, the physical features and needs of the users are emphasized. In our study, experts involved in design are aware of the expressive needs of the patients, but in being restricted by the technical and financial requirements, they are forced to downplay the patients' expressive needs when making compromises.

Maintenance. Patient clothing is mainly maintained in the large units of industrial laundries, owned and run by either the public or private sector. The process of maintenance begins at the care institution by storing the dirty laundry by the care staff. It is transported to the industrial laundry, and sorted out by the laundry staff. In the industrial laundry, high temperatures are used in washing (70–85°C for 10 minutes) to disinfect the clothes and to clean the sometimes heavily soiled garments. The temperatures for tunnel drying are high to

speed up the process for financial reasons (temperature of clothes is 100–110°C, temperature of air 160°C). The process leads to choosing mixtures of polyester and cotton that are durable, easy to wash, and need no ironing.

The experts do understand the high temperatures for washing, and strongly criticize the current system of forcing the designers to limit their choice of materials and fastenings because of the very high temperature of tunnel drying. They also claim that it is difficult to change the design of patient clothes because they see the laundry as an inflexible partner to work with. On the other hand, the laundry staff presents many of the demands directed at them as unrealistic as long as they have to meet the very restricted financial demands.

In addition to the industrial laundry, care staff may also maintain garments by washing and drying them in lower temperatures (60°C), using small machines at the care unit. This system is criticized by the interviewed experts of design and laundry. The care staff is not seen as experts of laundry work, and this may raise problems. The clothes may not be properly cleaned or hygienic, or the clothes may be destroyed by unskilled work. It is also seen as problematic to use the very limited time of the care staff for doing laundry instead of care work.

After the laundry the clothes are folded by a machine or by laundry staff, and transported back to the care institution. Patient clothes are stored at the ward in a room reserved for them. The color coding—different colors for different sizes—of standardized clothing makes it easier to sort and store the garments in the process of maintaining. Depending on the practices of a particular care unit, patients themselves or nurses choose the clothes for the individual patients.

DISCUSSION

In our data, designing patient clothing is represented as a highly complex net of conflicting needs. The target group for patient clothes alone is broader than in any other field of clothing design. The experts claim that it is very challenging to design literally for “all ages and abilities”, let alone all the other actors involved in the process. Based on our findings we were able to identify at least eight actors (some animate and some inanimate) that all are somehow associated with each other and thus, form a web of actors. In Figure 1, we describe the network of actors shaping the design of the

patient clothing.

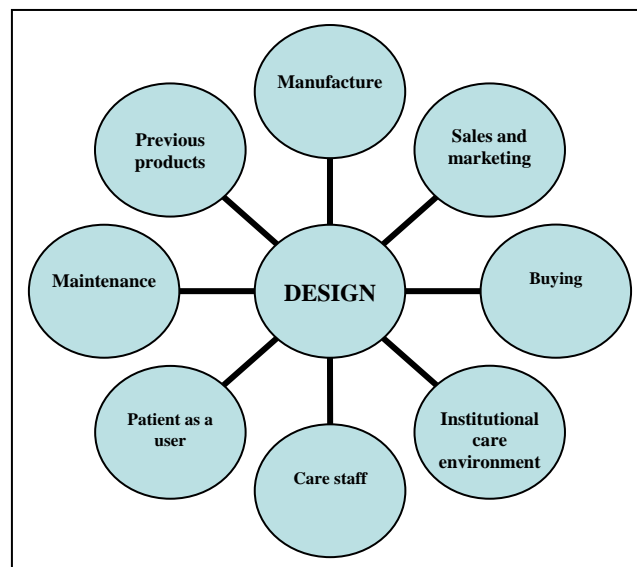


Figure 1. Network of actors shaping the design of the patient clothing.

Based on actor network theory we can assume that the reality of designing patient clothing is based on negotiations between these actors whether they are animate or inanimate (Callon 1990). Our findings are in accordance with several studies that have shown that social, political and cultural issues and aspects are involved throughout the development of artefacts such as patient clothing (see Bijker, Hughes & Pinch 1990, MacKenzie & Wajcman 1999).

The system of providing and maintaining clothing for the patients is initiated by the institutions. The care institutions, their practices, values and cultures have a major impact on the designing of patient clothing. In the process of design of new patient clothing these practices, values and cultures are communicated and they are intertwined with those values, cultures and practices communicated by the other actors.

The main aim of innovating patient clothes was to improve the level of hygiene and care of the patients. The existing items of patient clothing will shape the designing of future products (see Latour 1988). They shape our thinking about what is possible, what solutions are accepted and what is expected for the patient clothing. In the field of patient clothes the role of the previous products can be even more profound than in mainstream fashion design because the cycle of changes is slower.

According to our findings ethical issues in patient design were associated with efficiency, beneficence, privacy and

autonomy. Efficiency has been claimed to be a central principle in care institutions (i.e. Laine, Finne-Soveri, Björkgren, Linna, Noro, Häkkinen, 2005). Efficiency was underlined by experts interviewed in this study: they were aware of the tight budget of the care institutions and the expenses caused by the maintenance of the clothes. In addition they pay attention to the heavy workload of the care staff and the fact that the patient-staff ratio was often low. The principle of efficiency was applied in design for example by choosing materials that tolerate the industrial laundry, and details that facilitate care work. All decisions were guided by the aim to manufacture patient clothing as cheaply as possible.

Benevolence, doing good, is the main ethical principle of care work. In design of patient clothing benevolence underlies the attempts to make the care work more ergonomic and when taking into account the functional and social needs of the patients.

The principles of privacy and autonomy are very complex in a context when a person needs care. To be able to help the patient his or her personal privacy often has to be neglected. In the system of patient clothing privacy is ignored in several ways. The same clothes, whether they are underwear, pajamas, dressing gowns, dresses or sweat suits are shared by tens or even hundreds of patients. This was taken for granted in the interviews and not discussed by the experts. The issue of autonomy was discussed more, mainly in the context of using restrictive devices. The current system of using such devices was reasoned as being the best choice of a variety of poor solutions.

The experts involved in the design process of patient clothes felt that they do their best in a difficult situation of conflicting needs and a complex system of values. They needed to compromise between cost saving interests of the system and the benevolence of the individual patients. The experts describe their work as being “between a rock and a hard place”, and face ethical dilemmas when having to prioritize the needs of the institution instead of the end-user.

We hope that the analysis of this complexity helps to understand the limitations of the future design of patient clothing and designing for the institutional settings in general. It seems that before concrete improvements in the design of the patient clothing may be considered, the apparent conflicts between the various actors involved in the process need to be

solved. We received numerous comments about an urgent need for collegial discussions focusing on current practices, values and culture in care institutions. These aspects need to be openly discussed and challenged where needed.

Our study has shown that compared to mainstream fashion design, designing patient clothing is a considerably slower process that requires specialized knowledge of old age, ill health and the system of care and maintenance. In this sense designing patient clothing is closer to designing assistive devices or other devices for promoting health and functional abilities. On the other hand, patient clothing used in institutional settings is part of the user's individual appearance and very close to his or her body. These aspects bring patient clothing closer to other types of clothing, and distance it from assistive devices.

Based on these observations we point out that the deeply contextual nature of design does need to be acknowledged in design studies more carefully. Among the issues to be discussed are the special features of the products that are being developed, the materials used, and the characteristics and needs of target users. Design researchers should also consider how the speed of the design process, time reserved for the design work, and the multiple actors involved in the design process affect the design of an end-product. When contextualising design we should not only point out the characteristics that differentiate design fields, but also look for elements that connect design fields that are usually seen as distant from each other.

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