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Pockets, Buttons and Hangers: Designing a New Uniform for Health Care Professionals

Trine Brun Petersen, Vibeke Riisberg

Introduction

Uniforms have been the subject of much scholarly debate, focusing primarily on their role as disciplinary devices.¹ This article takes a different approach by focusing on uniforms as part of a large-scale system—one that has to reconcile traditional sartorial concerns of how to dress and present the body with the demands for simplicity and rationality made by modern-day industrial laundry processes. It does so by studying how a new uniform for health care professionals in a Danish region came into being as a negotiation between a number of heterogeneous actors who fundamentally influenced the final design. The crux of this type of design is formed by conflicting demands: that the garment should be able to accommodate the user's bodily existence and that it must be adapted to the lean and rational maintenance processes of modern day health care. The aim of this article is to explore the complex interplay between the different actors involved in the design process and to discuss the uniform as a design product that combines the meticulous functional analysis of industrial design with concerns about self-presentation and identity of fashion and dress.²

Mapping the Heterogeneous Actors of the Design

Drawing on Actor-Network Theory (ANT), the article explores the new uniform as an element in a heterogeneous material-semiotic network to illustrate how a wide range of actors, both human and non-human, contributed to the final design. This analytical strategy helps us to gain insight into negotiations between functional demands and aesthetic concerns in the design process and to assess how factors “behind the design” influence the final outcome. The empirical material consists of external and internal documents from the design process, interviews with central actors in the process, and observations of the logistic and cleaning processes. Although we present a single case, the negotiations between a design aesthetics and a complex system of maintenance and logistics is a general condition when developing new uniforms for the health care sector or, in more general terms, when designing for public institutions.

- 1 See, e.g., Brian McVeigh, “Wearing Ideology: How Uniforms Discipline Minds and Bodies in Japan,” *Fashion Theory* 1, no. 2 (1997): 189–213; Jennifer Craik, *Uniforms Exposed: From Conformity to Transgression* (Oxford: Berg, 2005); Prudence Black, “Lines of Flight: The Female Flight Attendant Uniform,” *Fashion Theory: The Journal of Dress, Body & Culture* 17, no. 2 (2013): 179–96.
- 2 Uniforms are not normally considered part of the fashion system understood as a system of rapidly shifting aesthetic preferences, although this varies from sector to sector. But even in less “fashion-sensitive” sectors, such as health care, the current fashion ideals manifest themselves in the cut, material, and silhouette of the design.

During the past decade, the links between ANT and design have been explored by a number of scholars, and ANT has shown itself to be a novel and versatile strategy for analyzing objects, especially in the sense of their affordances and patterns of use. In 2004 *Design Issues* published a special issue on Science and Technology Studies (STS) and design, and a number of scholars have since contributed new theoretical and empirical perspectives in the exploration of concerns shared by ANT and design.³ Among these, Albená Yaneva proposes a new research program for design studies inspired by ANT. In her view design should be considered not merely an “aesthetic envelope” but a way of tying and stabilizing social bonds. Crucial to this particular framework is the conviction that design not only symbolizes the social order but, in fact, performs it. This perspective also implies that design should be explained by its “designerliness” rather than through other, supposedly more fundamental forces, such as history, psychology, or economy.⁴ Yaneva’s interest is primarily in the effect of design as one way, among others, of “making the social durable.”⁵ Nickelsen and Binder take a similar approach in their study of designers at work but are mainly interested in analyzing the design process itself.⁶ In the area of fashion, the suggestion has been made that ANT offers a framework for understanding how fashion is “done” by different actors and across certain “passage points.” The fashion historian, Marie Riegels Melchior, has shown how Danish fashion can be analyzed as a network with a particular configuration that focuses on the “democratic” and the “accessible,” but she also has shown how this configuration seems to be fragile and ever-changing.⁷ Fashion scholar Joanne Entwistle has discussed the potential of ANT in exploring how value is produced and stabilized in the field of fashion.⁸ Furthermore, Danish fashion policies have been analyzed in the light of Callon’s “sociology of translation.”⁹ Apart from these scholars, few in fashion seem to have taken up ANT as an analytical strategy.

This study differs from the studies listed in its interest in the tangible object and its particular shape, which can be seen as the result of a series of negotiations between heterogeneous actors. The aesthetic form of the object has typically been the domain of art historians and, more broadly, the humanities—especially through the concept of “style,” in which the physical attributes of the object are interpreted in the light of historical, cultural, and philosophical paradigms.¹⁰ The approach taken in this article, deriving as it does from ANT, is different in that it tries to disentangle the diverse and sometimes rather prosaic factors that contribute to the final shape of the object. It treats the designed object as a product of a “work-net” rather than as the result of a process

3 Kjetil Fallan, *Design History: Understanding Theory and Method* (New York: Berg, 2010); “De-Scribing Design: Appropriating Script Analysis to Design History,” *Design Issues* 24, no. 4 (2008): 61–75.

4 Albená Yaneva, “Making the Social Hold: Towards an Actor-Network Theory of Design,” *Design and Culture* 1, no. 3 (2009): 273–88.

5 *Ibid.*, 281.

6 Niels Christian Nickelsen and Thomas Binder, “Design and Heterogeneous Engineering: Toward an Actor–Network Perspective on Design,” *Artifact* 2, no. 3–4 (2008): 164–75.

7 Marie Riegels Melchior, *Dansk på Mode! Fortællinger om Design, Identitet og Historie i og omkring Dansk Modeindustri* [Danish in Fashion! Tales of Design, Identity and History in and around the Danish Fashion Industry] (Copenhagen: Museum Tusulanums Forlag, 2013).

8 See Joanne Entwistle, *The Aesthetic Economy of Fashion: Markets and Value in Clothing and Modelling* (New York: Berg, 2009).

9 Marie Riegels Melchior, Lise Skov, and Fabian Faurholt Csaba, “Translating Fashion into Danish,” *Culture Unbound: Journal of Current Cultural Research* 3 (2011): 209–28.

10 Anders V. Munch, *Den Stilløse Stil - Adolf Loos [The Styleless Style]* (Copenhagen: Kunstakademiets Arkitektskoles Forlag, 2002).

of creation performed by an autocratic designer, as design studies and design history might have been inclined to assume in the past.¹¹ The actors involved in the design process might be viewed as such a “work-net,” and the final product as an attempt to create a stable configuration, which might (or might not) come in time to be accepted by the involved actors and hence to be “blackboxed.”¹²

Like Melchior’s, Skov’s, and Csaba’s study, our analysis of the material is modeled partly on Callon’s study of a breeding project for scallops, which is divided into four phases, or “translations”: problematization, interessement, enrolment, and mobilization.¹³ Whereas Callon’s analysis forms part of a discussion of how scientific facts are produced, the analytical framework is used here to shed light on how a specific design comes into being. The following case is an opportunity to gain unique insights and knowledge from the design process of a uniform concept before the decisive factors of the design are blackboxed. Using ANT as an analytical strategy in this case provides general perspectives relevant to design theory and the design profession because it demonstrates how fashion design can be viewed as part of a larger system parallel to that described for many other areas of the design field.¹⁴ Both to add theoretical depth and to establish a historical background for the study, a review of selected literature on health care uniforms follows.

Health Care Uniforms: Between Fashion and Industrial Design

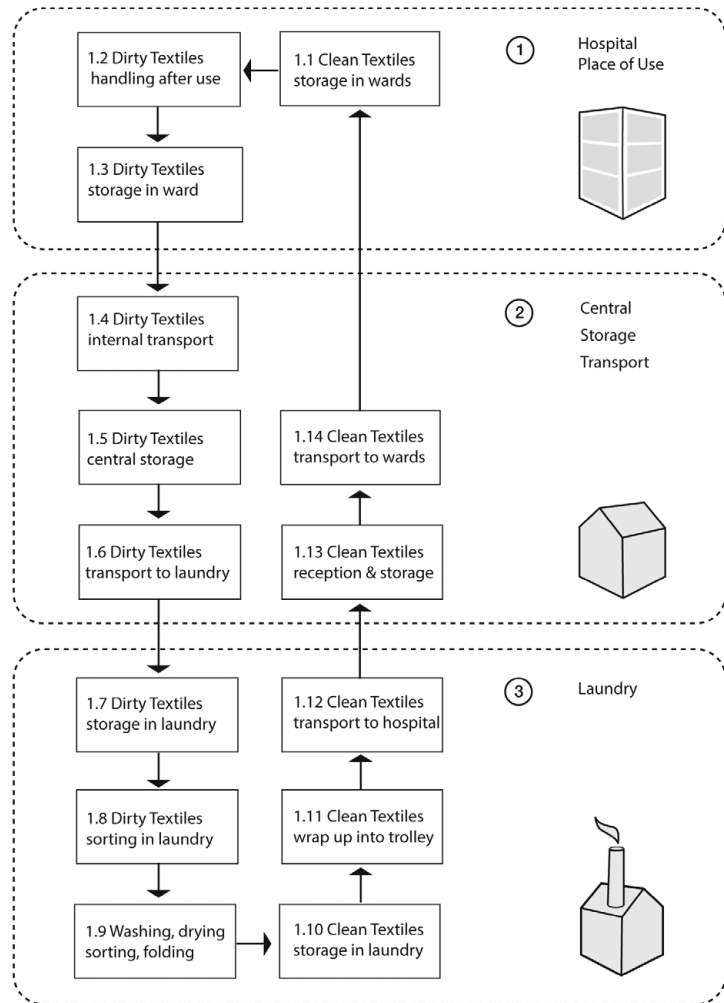
Uniforms for the health sector date back to the mid-nineteenth century and the breakthrough of modern, evidence-based medicine. From the beginning, the uniform has been part of the consolidation of the health professions and has been seen as the symbol of its scientific anchorage.¹⁵ Traditionally, different types of attire have been used to identify the different health care professions, which is known as a stratified clothing system, in contrast to a “complete system,” in which all employees wear the same uniform regardless of their profession.¹⁶ In their study, Timmons and East interpret the change from stratified to complete clothing systems in an UK hospital as an attempt to create a new kind of “corporate” health care professional whose allegiance is primarily to the organization rather than, as has traditionally been the case, to the profession.¹⁷

Compared to most other garments, health care uniforms are generally simple in their material and shape and are characterized by their lack of details. To a large extent, their plainness is conditioned by hygiene regulations and industrial laundry processes, which severely restrict the aesthetic latitude of the designer.¹⁸ Health care uniforms are part of a larger system of maintenance,

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- 11 Fallan, *Design History: Understanding Theory and Method*, 55–105; Edward Woodhouse and Jason W. Patton, “Introduction: Design by Society: Science and Technology Studies and the Social Shaping of Design,” *Design Issues* 20, no. 3 (Summer 2004): 1–12.
 - 12 If and when the new selection of uniforms is accepted by all involved actors, its functions might be said to be “blackboxed” in the sense that the conflicting demands and stumbling blocks that emerged in the design process are ironed out and eventually forgotten.
 - 13 Michel Callon, “Some Elements of a Sociology of a Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay,” in *Power, Action and Belief. A New Sociology of Knowledge*, ed. John Law (London: Routledge & Kegan Paul, 1986).
 - 14 Paul Du Gay et al., *Doing Cultural Studies: The Story of the Sony Walkman* (London: Sage, 2013); Guy Julier, *The Culture of Design* (London: Sage, 2014).
 - 15 Dan W. Blumhagen, “The Doctor’s White Coat: The Image of the Physician in Modern America,” *Annals of Internal Medicine* 91, no. 1 (1979): 111–16.
 - 16 Anat Rafaeli and Michael G. Pratt, “Tailored Meanings: On the Meaning and Impact of Organizational Dress,” *The Academy of Management Review* 18, no. 1 (1993): 32–55.
 - 17 Stephen Timmons and Linda East, “Uniforms, Status and Professional Boundaries in Hospital,” *Sociology of Health & Illness* 33, no. 7 (2011): 1035–49.
 - 18 On the concept of aesthetic latitude, please see Malene Leerberg, Vibeke Riisberg, and Joy Boutrup, “Design Responsibility and Sustainable Design as Reflective Practice: An Educational Challenge,” *Sustainable Development* 18, no. 5 (2010): 306–17.

Figure 1

System flow diagram: 3 locations, 14 intersection points with hygiene procedures. Based on Danish Standard DS 2451-8:2001. Rights holder: Vibeke Riisberg.



19 Interview with Calle Mosegaard, former head of sales, Borch Textile Group, October 9, 2014.

20 Fashion scholar Kate Fletcher has done research on clothing and sustainability in relation to cleaning processes. However, this work is mainly focused on private rather than institutional contexts. Kate T. Fletcher and Phillip A. Goggin, "The Dominant Stances of Ecodesign: A Critique," *Design Issues* 17, no. 3 (Summer 2001): 15–25. The more recent coverage of the relationship between uniforms and laundry processes is in Sandy Black and Karina Torlei, "Designing a New Type of Hospital Gown: A User-Centered Design Approach Case Study," *Fashion Practice: The Journal of Design, Creative Process & the Fashion Industry* 5, no. 1 (2013): 153–60.

21 In fashion terminology, the term for the individual design would be "style." However, in this context we retain the more commonly applied term, "model."

22 Black and Torlei, "Designing a New Type of Hospital Gown: A User-Centered Design Approach Case Study": 154.

which includes transportation to the laundry, sorting, washing, pressing out water, hanging, drying, folding, sorting, and return transportation back to the hospital for reuse (see Figure 1).

These "backstage processes" have had immense importance for the design of health care garments since the introduction of advanced industrialized laundry processes in the early 1980s.¹⁹ However, they generally have not received much attention, with the exception of a recent article on the design of hospital gowns.²⁰ The industrial system for the maintenance of hospital clothing typically entails a heavy focus on cost effectiveness and thus limits the number of models that can be handled rationally.²¹ Such rationality has been interpreted as leading to a "one-size-fits-none" rather than a "one-size-fits-all" form of logic.²²

In sum, the large number of constraints poses severe demands on the design of health care uniforms, in terms of materials,

shape, and fasteners along with its role as a central working tool of the health professions. As a result, several strong discourses influence the design of the health care uniform. The discourse of user-centered innovation recently has been added to these factors, as patients and staff are included in the design process—whether through qualitative or quantitative studies or as direct partners in the actual design process.²³ This inclusion makes the design of health care uniforms a careful balancing act between political, economical, technical, and professional criteria for evaluation.

Problematization: Preparing the Ground for a New Uniform in a Danish Region

The design of a new health care uniform is no everyday occurrence as uniforms are normally made to last.²⁴ In the study presented here, which took place in a Danish region, the existing uniforms had been in use for more than 25 years before the decision was made to replace them with a new, up-to-date, and cost-efficient design.

The idea of a new uniform program was formed against a background of regional political strategies and the promise of economic gains through technological innovation. The idea originally came from the largest laundry facility in the region.²⁵ As a public facility, partly owned by the region, the laundry runs an industrial facility in tight competition with a number of private laundries. Furthermore, the laundry's services are open to competitive tenders every fourth year, which means that the management has a sharp focus on efficiency and running costs. In the years leading up to the launch of the uniform project, the laundry had successfully embarked on a number of innovation projects that had cut down operating expenses significantly.²⁶ In the case of the uniforms, the hope was that a combination of new laundry technologies, innovations in materials and design, and a "leaner" selection of models would result in large savings for the laundry and hence for the region. With this background, the leader of the laundry service approached the director of the region with the idea of designing a new uniform. One of the central arguments was that the new program could be designed so as to cut costly manual procedures down to a minimum and thus eventually be self-financing.²⁷

Meanwhile, the region needed to brand its health care services and was in the midst of erecting two large "super hospitals," which meant an enhanced focus on new technology, efficiency, and rational working procedures. Furthermore, a similar project had already been launched in another region, which paved the way for a change in perception of the uniforms from their being a necessary working tool to their being a means of signaling unity and professionalism.²⁸

23 Linsey Gordon and Silvia Guttmann, "A User-Centered Approach to the Redesign of the Patient Hospital Gown" *Fashion Practice: The Journal of Design, Creative Process & the Fashion Industry* 5, no. 1 (2013): 137–52.

24 In some sectors, such as air travel, uniforms are quite closely connected to the rapidly shifting aesthetic preferences of the fashion system. See, for example, Prudence Black, "Lines of Flight: The Female Flight Attendant Uniform" *Fashion Theory: The Journal of Dress, Body & Culture* 17, no. 2: 179–96; and Joanne Entwistle, "Fashion Takes Flight: The Air Stewardess and Her Uniform," in *Airworld: Design and Architecture for Air Travel*, eds. Jochen Eisenbrand and Alexander Von Vegesack (Weil am Rhein: Vitra Design Museum, 2004), 176–212.

25 Interviews with the head of Laundry Services, December 9, 2013, and with the project manager, November 26, 2013.

26 Among these projects was the move toward a combined sheet and blanket unit, which made the handling and cleaning of hospital duvets cheaper and more efficient.

27 Aarhus Universitetshospital Servicecentret, "Uniformsprojektet Region Midtjylland. Statusnotat December 2011," [The Uniform Project Region Central Denmark. Status Memorandum] (Unpublished document, 2011): 1–5.

28 The two uniform projects differed fundamentally in their approach, as well as in the resulting design. The new uniform of the other region was conceived as a politically motivated project, which focused on uniting and branding the region's health care services and was less interested in cost effectiveness through rational handling and cleaning processes.

In other words, the new uniforms were seen as a multiple remedy, offering savings in labor costs through textile innovation, enhanced “esprit de corps,” and regional branding effects.²⁹ Against this politico-economic background, the decision to launch a design competition for a new uniform program was made in May 2011 by Strategic Leadership Forum, a body consisting of the hospital’s management team and the administrators of the region.

Enrollment: Identifying and Recruiting the Actors

From the beginning the process was handled as a matter that had implications for labor relations, and the various stakeholders were identified and included in the process. The project had a two-fold purpose: to design a new uniform that could support the employees’ working practices and professional identity, but also to design a product line that would be labor-saving in the processes of logistics and laundry. This dual agenda was reflected in the establishment of two working groups: an employee forum to support the involvement of users in the process, and a service leader group that would work with the improvement and harmonization of logistics and handling.

Early in the process, “user-driven innovation” was introduced by a consultant as a key element in the design of the new uniform. At all stages of the development process, user involvement was considered a key factor in designing a functional uniform, and representatives of the different user groups were involved both directly and indirectly using both qualitative and quantitative methods. The process itself of involving users was thought to yield beneficiary results and was expected to result in “a certain branding effect, the creation of identity and ownership through the involvement of the employees of [the] region...”³⁰ In preparation for the design competition, a design camp was arranged for representatives of the various health care professions and for people with design skills, such as designers, textile technicians, and graphic designers. The themes of the camp included “identification,” “body types,” and the uniform as a “mobile office.” Materials generated by the user involvement process formed the background for the competition. In this way the users were involved in the process from an early stage, and the different activities were presented in a number of reports. These reports functioned as “inscription devices,” transforming the utterances of the users into written text, numbers, and graphs and thus giving them a fixed and tangible existence.³¹ These reports, viewed as what Callon would call “interessement devices,”³² supplemented the discourse on technological innovation with a discourse of the uniform as closely connected to the work practices and professional identity of the potential users.

29 Aarhus Universitetshospital Service-centret, “Uniformsprojektet Region Midtjylland. Statusnotat December 2011”: 1–5.

30 Ibid., 3.

31 Bruno Latour and Steve Woolgar, *Laboratory Life: The Social Construction of Scientific Facts* (Beverly Hills, CA: Sage, 1979), 51.

32 Callon, “Some Elements of a Sociology of a Translation,” 207–08.

The design competition was held in early 2012. The committee chose the proposal of a young designer who had no experience in uniforms but was known for his high-quality “slow fashion” line of men’s wear. In the words of the judging committee, the design was chosen for its general aesthetics, its sartorial details, and use of new materials.³³ The committee also stressed that the proposal would undergo further development in collaboration with technical staff and health care employees.

The Design as an “Obligatory Passage Point”

In the context of this article, the design of the uniform was the common issue with which all actors had to come to terms and thereby constituted what Callon calls “an obligatory passage point.”³⁴

The first version of the uniform-to-be was the proposal submitted for the competition. The design proposal, presented as a collection overview, consisted of 18 models: eight were for women, five were for men, and five were unisex. The designer’s aim was to allow individual employees freedom of choice, while also maintaining a homogenous and professional appearance. The aesthetic was described by the designer himself as “contemporary casual” and characterized by the terms “timelessness,” “purity,” and “Nordic.”³⁵ Comfort, hygiene, and aesthetics were emphasized in the text, and the competition proposal was accompanied by quotations from the user survey, trend research, and research in the importance of logistics for textiles in hospital settings.

In compliance with the design brief, the program was designed as “complete wear,” meaning that all employees would be using the same uniform, regardless of their profession. But to allow for the specific needs of different professions, as well as for personal sartorial preferences, the uniform was conceived as a selection of work wear from which employees could freely choose. Comprehensive efforts were made to ensure that the uniform program addressed the largest number of needs possible, with a minimal number of models. This approach had obvious practical advantages in that it endowed the uniform with the personal freedom of individual clothing, but it also represented a break from the established practice of using the uniform to communicate professional divisions.

The focus of the program generally was to provide the wearer with an orderly, clean, sharp silhouette and to ensure that the uniforms would afford freedom of movement, even in extreme body positions. Although classic in their appearance, the models also had many subtle sartorial details that set them apart from the existing simple models. Such details included half-belts, pleats, and slits to afford both a close fit and freedom of movement. A more tidy and professional look was obtained by designing most

33 <http://www.rm.dk/om-os/organisation/uniform--for-medarbejdere/designkonkurrence/>

34 Callon, “Some Elements of a Sociology of a Translation,” 205–06.

35 Kjetil Aas, “Konkurrenceforslag,” [Competition Proposal] (unpublished): 1.

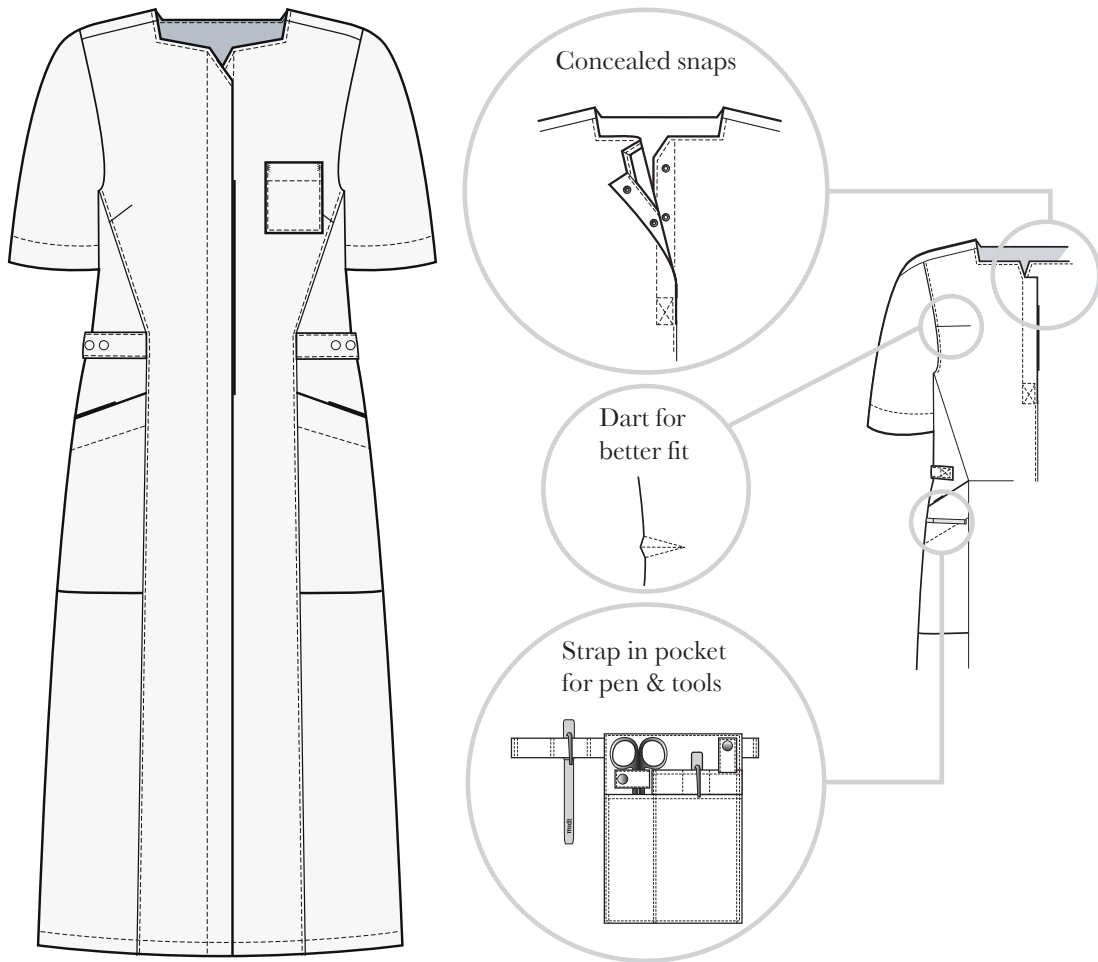


Figure 2
Long 'coat dress' and illustration showing the elaborate details of the uniform. Competition Proposal © Kjetil Aas.

of the short smocks, dresses, and coats with a large beaded trim, thus preventing the uniforms from hanging shapelessly on the wearer.³⁶

Typologically, the program sported forms of clothing that had not previously been part of the uniform program, including shirts, skirts, and a dress. This range of clothing moved the program in the direction of casual business wear and added to its non-institutional character. Furthermore, the somewhat institutional look of traditional uniforms was downplayed by a number of features—the most obvious of which was the concealment of the snaps and the “fitted” cut of the garments.³⁷ For example, the characteristic square-neck opening added sharpness and precision to the wearers’ appearance. Along the same lines, the pants—both a slim fit and a regular model—had a tailored but adjustable waist, instead of the elastic band normally used, and were fitted with discreet slant inner pockets. The new uniforms were designed with a high degree of “form stability,” which contributed to creating an orderly and tidy expression (see Figure 2).

36 This problem had been apparent with the existing uniforms, which often hung rather shapelessly on their wearers and were in the user study compared to “nightwear.”

37 This effect was obtained through the use of concealed plackets.

Mobilizing the Laundry and the Users

Once completed, the design was followed by a test phase in which the program (with some minor changes) was produced by a garment manufacturer and tested both by the laundry function and by the users-to-be. The test collection consisted of 19 models, and they were tested in daily use by 300 employees over a period of six months.³⁸ Throughout the design process, representatives of the users had insisted on large pockets in coats and smocks, so that they would be able to hold their handbooks, manuals and other “tools of the trade.”³⁹ To prevent the pocket contents from weighing the garment down on the wearer’s neck, pockets were placed on the front and side, rather than solely on the front. In use, however, they hampered the wearer’s freedom of movement and had to be changed. Because the pockets were sewn into the seams of the form-fitting smock, any revision would have required radical change to the design, and it was too late in the process for that. The decision was then made to stitch part of the pocket down, so that only the front space could be used. This solution represented a break with the program’s otherwise concise aesthetic.

The most radical adjustments took place as a result of the laundering process. In general, the sartorial details and cut of the clothing posed a challenge to the machines and work processes in the laundry. The demands of the laundering process of course had been considered throughout the design process, but unexpected problems arose when the test collection arrived at the laundry facility. The water press caused damage to the zippers, making experimentation with other closures, such as buttons, necessary. The use of snaps to close the short smocks and coats did not pose an immediate problem but was seen as regressive by the manager of the laundry. To support her request for a more technologically advanced uniform, she called attention to a new technique that uses x-rays to check for items left in pockets, which would make manual searches unnecessary. Although the laundry facility did not yet possess this technology, the metal snaps would hinder its future implementation because the x-ray equipment could not tell the difference between a fastener and other minor objects. Introducing this technology reconfigured the design interests of the region in particular as they would be the ones to benefit of long-term savings. The discursive introduction of the new laundry technology might be viewed as an “interessement device” that could potentially bring the focus back to technological innovation and enhance rational handling.

Even more problematic was the shape of the inner pants pockets, which were a key feature of the new, tidier, and representative style of the program. The visually discreet slit pocket was difficult for the laundry workers to empty without putting their hand into it. This process took extra time and, even worse, entailed the risk that the workers might be pricked by used needles left in

38 The so-called “walk test” was conducted from March 2013 until July 2013, and the decision of which models to include in the final selection were then based on the choices of the test participants.

39 Implementation of computer tablets was discussed, and the pockets were sized so they would be able to hold an iPad. However, the plan of replacing handbooks with tablets was not realized, and in the meantime, the iPad mini was launched.

the pocket. As a consequence of what was deemed an unacceptable risk to the laundry workers, the pocket was redesigned as a large, round pocket on the outside of the pants so that the pocket could be emptied by a quick shake of the pants.

In general, the new, more formal pants models were difficult to handle in the laundry and were the subject of a number of discussions and modifications. Even the cut turned out to be a problem. Pants were normally mounted manually on a hanger for the actual drying process, but the slim-fit pants were too narrow to fit the dimensions of the hanger, and the process of hanging them manually was awkward and created strain on employees. To remedy this situation, the leg of the pants was widened and an elastic band was inserted so that the leg could be stretched to fit the hanger.⁴⁰ A similar problem arose with the fitted female coat, which in contrast to the existing coat had a curved waist to give a tailored silhouette. This particular cut also caused additional work for the laundry staff because they had to close four buttons instead of two to keep the item on the hanger, thereby doubling the time needed to hang the item to dry. This extra cost was ultimately accepted by the steering committee because the new cut was considered an essential feature of the new program.

In total, the alterations brought the pants considerably closer to the loose, informal look of the traditional uniforms than the designer originally intended because the procedure of emptying the pockets, the water press, and the hangers fundamentally influenced the design. Even though the program was substantially adjusted to fit the machines and working process of the laundry, the original vision of a less labor-intensive and more cost-efficient uniform was not realized. The agenda of technological innovation was largely ousted by the discourse of user-driven innovation, which, combined with the sartorial ideals of the designer, resulted in a uniform that was well-adapted to the body but that did not make allowances for the labor-saving mechanical processes originally intended. In fact, the new program turned out to be *more* labor-intensive in some of its features (e.g., the number of pockets, and the buttons and the shape of the fitted coats); in addition, the principle of free choice meant that many employees made use of three garments, instead of the usual two. In fact, the region estimated that the new uniforms would raise the running cost by 58% if the program was fully implemented.⁴¹ Thus, the attempt to create a more cost-effective network of automated handling of uniforms failed. Instead, the joint forces of user-driven innovation and sartorial principles resulted in quite a different constellation, in which the need for bodily comfort and professional self-presentation became paramount.

Because of the increased cost, regional management decided that the uniform concept would not be implemented as a united concept.⁴² Thus, one of the fundamental principles of the program

40 In the end, the slim-fit pants did not become a part of the final selection because their stretch material could not withstand the harsh industrial washing.

41 Email correspondence with the head of Laundry Services, November 12, 2014.

42 Instead, the decision of which parts of the collection to offer to the employees was left to the local management of the individual departments.

remained unrealized, and the enrollment in the new uniform concept was conditioned by local goodwill and economy rather than being accepted as a complete system. This decision meant that the benefits of the tight and rational system of the uniform concept would potentially not be reaped. In this sense, the mobilization of the allies (i.e., in the regions' hospitals in general) did not succeed. The shape and detailing of the uniform can be seen to result from the involvement of heterogeneous actors, each of which has an influence on the final shape of the uniform concept; the uniform is not the result of the artistic vision of an autonomous auteur-designer, which often remains the stereotype, especially of the fashion designer. This perspective emphasizes the interconnectivity and the iterative nature of the design process and views the final design as the result of a series of conflicting interests and ensuing negotiations. Through this particular lens, the uniform program can be seen as the materialization of a specific socio-material situation, or network, in which a number of actors each strive to realize their particular idea of the new uniform. To echo Yaneva, the final design of the uniform is the result of a particular constellation, which is given duration precisely by its materiality.⁴³

Design as Micro-Politics

The new uniform program of the region might be seen as the result of three competing and partly conflicting discourses: the discourse of technologically driven innovation championed by the laundry, the politically convenient discourse of user-driven innovation, and the design discourse, of which the designer and constructor were the main proponents.⁴⁴ The design itself—the tangible product—can be seen as the point of intersection between these often contradictory discourses. This perspective does not imply some kind of determinism; rather, it is intended to point to the essential political nature of the design process and hence to the design itself.

In common discourse, fashion is often presented as whimsical and fleeting, but as this study shows, fashion design—at least in institutional settings—shares many concerns with industrial design. Like other designers, the fashion designer must be able to navigate in the complex technological and politically charged processes that may be inherent in such large-scale clothing design projects. Most striking was the opposition between the need to adapt the uniform to the maintenance processes and the ambition to create a uniform adapted to the human body and deemed suitable for expressing professional ideals. Such concerns have traditionally had their separate spheres of activity in industrial design and fashion design, respectively. Here, they converge in the design of large-scale occupational clothing, where the processes of logistics, laundry, and maintaining the clothes are as important as issues of comfort, self-presentation, and professional identity. In such large-scale clothing systems, even seemingly minor details—such as the

43 Yaneva, "Making the Social Hold," 283.

44 This division is similar to Roberto Verganti's concept of design-driven innovation, which he develops as an alternative to the better-known approaches of technological and user-centered innovation. Roberto Verganti, *Design-Driven Innovation: Changing the Rules of Competition By Radically Innovating What Things Mean* (Boston, MA: Harvard Business Press, 2009).

choice of buttons or the number and placement of pockets—take on immense significance, both in terms of the design’s acceptability to the projected users and to the maintenance processes. In this respect the fashion designer’s process toward a new uniform program resembles that of industrial design.

The aim of this article has been to study the new uniform concept of a Danish region “in the making” to understand how the final program came into being in light of a continuous negotiation between actors with different interests in the outcome. This study shows how a specific design is “shaped” by a number of heterogeneous actors, some of whom may at first seem irrelevant or insignificant. The complex factors that influence the final design can only be uncovered by meticulously following the actors, and this approach serves as an alternative to the more distanced “reading” of the design object as a symbol of its cultural and social origin. Instead, this article aims to understand the design object through its formative state and as the stabilization of a specific configuration of discourses on regional branding, technological innovation, user involvement, and professional ideals.

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