Design strategies for human relations in services

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Abstract

This paper investigates the degree of control that designers might have over human relations in services. For this purpose, a number of speculative service designs were devised to address work-related stress. We focus on three of the generated designs, where design interventions have made changes to the material circumstance in which contacts among users and providers take place. The paper looks into the capacity of design to promote discussion and social support, and its capacity to make objects act as 'quasi-others' in social encounters. Through the case studies we show how different levels of designerly control can be exercised in practice.

KEYWORDS: design *of* service, design *for* service, generative research

Introduction

Should service designers strategize for the social encounters among people in service settings? As seen in the growing body of specialized service design literature, answers to this question are typically an assertive 'yes' or its opposite: a decided 'no'. Supporters of the first stance traditionally leant on the service research literature predating the emergence of the service design field itself. Here the emphasis is on importance of prototyping tools and methods that allow designers to plan for social encounters in service settings. These tools and methods (e.g. service blueprinting, storytelling) are meant to allow service designers control over the behaviours of people in a service setting, in their role as providers and users.

However, more recently some design researchers have warned against the planning of human relations in services, for this would place important restrictions on the improvisation and learning that can occur during service encounters. Researchers favouring this alternative approach conclude that designers cannot directly 'design' (i.e. strategize about) the encounter itself. Instead, inspired by related work on social design and experience design, they argue that designers should offer creative support for a community of people and institutions, and only after such a community has formed itself with a set of identifiable needs and wants.

In this paper we revisit the – sometimes implicit – debate about the designerly control over human relations in services. In the following section, we will argue that both of the above positions assume that the level of control of design over human relations has a direct impact on how good the service encounter will be. Contesting this assumption, we posit that the degree of control that designers possess should be contingent on the degree in which people in a service setting can accept the intervention of external parties to improve their social well-being. Next, we investigate the influence that designers have in improving the well-being of people in a service. We do this by designing and studying a number of speculative service concepts that address the risk of unhealthy levels of work-related stress. Over the different cases, we investigate how each design intervention introduces material changes to an existing situation in which contacts between people take place (in this case contacts among workers, colleagues and potentially stress relief experts). These designs show very different levels of control over human relations, depending on the focus and the research carried out by the designers. Finally, we showcase three particular examples where designers have made very different choices on the degree to which they seek control or flexibility over human-to-human services exchanges. In doing so, the three cases show how there might be very different avenues for design to strategize about the control over human relations in services, all leading to promising directions to help workers balance their stress levels.

Designing human relations in service encounters

Services comprise two domains that may be the object of planned innovations: the interface (or 'front-office'), which accounts for the most immediate interactions among users and providers, and the infrastructure (or 'back-office'), which comprises the social-technical resources that provide support for such interactions. Secomandi and Snelders (2011) argued that the interface (including its integration with the infrastructure) is the primary domain of service design work. This work is complex, because the service interface is often heterogeneous; it is built from a diverse set of touchpoints between providers and users, including physical objects ('tangible evidence'), environments ('servicescapes') and face-to-face human exchanges ('service encounters'). In addition, the experience of the service interface is often dispersed over time and space, which means that designers can easily become confused about what is part of the service interface for users and how that is integrated into a complete experience for them. For many authors, the heterogeneity of the service interface gives rise to a need for orchestration in the design of services. With this is meant that the expertise required in the design process is diverse and needs to be integrated in order to create a coherent user experience. Pacenti, for one, spoke of service design as the 'direction of directors' (regia di regie) (cf. Sangiorgi, 2004, p. 30).

Given the need for orchestration across different touchpoints, designers have turned to the extant marketing, management and engineering literature for tools and methods that help them plan the user experience of services. Although planning tools and methods coming

from those areas eventually target the domain of the service interface (e.g., Shostack, 1984), they most often portray it as just the 'top of an iceberg'. In other words, the interface is seen as a small part of a larger operational/informational system that must be developed to support the service delivery process. This larger part of this system, the service infrastructure needed for delivery, is mostly hidden (underwater) from the user's experience.

The iceberg metaphor poses a potential problem for service designers, because it describes the interface as an insignificant part of the system, whose importance hardly influences the development of the underlying infrastructure. Thus, service designers are left with little decision-making power, since many of their decisions at the level of the interface will have already been made by others in order to create an efficient and effective infrastructure.

One could argue that these problems are not new for design. Ever since the industrial revolution, designers have had to conceive of satisfactory user experiences while working within (or around) the technical/financial constraints posed by mechanised production. In services, however, the non-mechanical, social dimension of human relations in a service setting is often in the foreground of the user experience of the interface. Thus, the question of whether human relations can be planned for as part of the service interface is a relatively new one for design. According to Penin and Tonkinwise (2009, p. 4327), it is the 'design of people' what differentiates service design from all other forms of design.

As stated above, answers to the above question found in the service design literature alternate from 'yes' to 'no'. The affirmative way sees no problem in the steering of the social behaviours of people in a service setting, which should be moulded in such a way that it becomes part of a social-technical system with predictable outcomes. This position owes much to the ideas behind a technique called service blueprinting, developed in the area of service marketing (Shostack 1984, 1985). Shostack (1977, p. 79) went as far as to suggest that political candidates may be 'packaged', insofar as their hairstyles and public speeches are carefully chosen by a dedicated committee. Her work has been largely incorporated in early service research (e.g. Moritz, 2005; Morelli, 2002; Moggridge, 2007, p. 412-429), and it had a strong influence on the design community.

As service designers adopted the service blueprinting logic, there have been attempts to make the control over service encounters less mechanical. Tools like customer journey maps and storyboards were introduced to service design with the explicit aim to 'facilitate empathic engagement' with the user experience of the service (Stickdorn & Schneider, 2011, p. 158). Nonetheless, it should be noted that the interactions between people in service settings described in such tools remain heavily scripted and protocolled, thus promoting strict control of design over social interactions in a service setting.

Lately, service design researchers have tended to answer the question whether human relations should be planned in the negative (e.g. Evenson & Dubberly, 2005; Jégou & Manzini, 2009; Kimbell, 2011; Meroni & Sangiorgi, 2011). Cipolla & Manzini (2009, p. 50), for instance, propose that human relations can only be 'meta-designed', meaning that planned interventions should only come 'behind or beyond' the relations themselves. Doing otherwise would mean reducing the depth and richness of human participation in services.

We may take the example of cheap airline transportation to flesh out the opposition presented above. In many cases of cheap air flight, services are devised around predictable operation units. Providers and users are then treated exactly as such units, with their behaviour and interactions being controlled by strict procedures. The result is a service

delivery process that is rationalised to the extreme and produced at extremely low operating costs. Naturally, the low cost persuades many customers to prefer this type of service.

On the downside of this example, we should point to what happens if users and providers do not stick to the rules and regulations of the service delivery system. Many people have had a dissatisfactory service experience with low cost carriers when not behaving according to the carrier's plans before, during, or after their flights (e.g. they chose the wrong transportation mode to the airport, they forgot to check in online and print out the boarding card, they queued in the wrong line, etc.). The result in such systems is that users get penalized for their 'misbehaviour,' leading to social interactions between people that can be characterized by stress, accusations, mistrust and suspicion. Such encounters can create a Kafkaesque setting where users and providers feel subjugated by a crude inflexible system where standards are pre-set for the behaviour everyone within the system, and where deviations from such standards are averted by the small print in the service contract that can lead to hefty fines. In sum, people can end up being treated as a potential menace to a highly rationalised service delivery process.

However, many airliners, even if their focus is on creating cost-effective offerings, aim for a different experience of their services, particularly of the human relations within them. An example that contrasts with the one described above is a service by KLM - Royal Dutch Airlines called 'Meet and Seat', for trans-continental passengers. In this service, before boarding the plane, passengers are asked to show their Facebook or LinkedIn pages to other passengers and to select someone with an interesting profile as the person to sit next to. So here KLM is appealing to the passengers' self-assessed need for social contact with a self-selected other, and the company remains in the position of merely supporting the extension of virtual social communities (Facebook, LinkedIn) into real life settings. In many ways, this type of service fits the advice by Jégou & Manzini (2008), Kimbell (2011), Meroni & Sangiorgi (2011) and others in the service design field, who argue that designers should support existing communities for service improvements, rather than establish a plan of improved service production before such communities have formed themselves.

However, from a design perspective one can raise the question whether KLM's approach is always better than the approaches of cheap airline carriers. Returning to the Meet and Seat service, there is a danger that passengers will end up disappointed by spending long flights next to self-selected strangers. As Frost, Chance, Norton & Ariely (2008) showed in the case of online dating, meeting someone in real life who, before, had seemed attractive online often leads to rejection and disappointment after the first contact. Applying this finding to KLM's service, what if you meet your match on a long-distance KLM flight and immediately start regretting your choice? How satisfied would you be with the remainder of your flight together? Thus, even while being supportive of self-organised forms of social relations, such design interventions might still lead to dissatisfactory results for people in the service setting.

To resume, the two directions found in the service design literature and described above stipulate distinct approaches to the practice of designers. The first is a practice driven by a desire to sustain a cost-effective infrastructure for the service delivery process. It employs tools and methods devised to control service encounters among users and providers, which can curb the spontaneity and improvisation that may arise during the encounter itself. The other is a practice that aims at having service encounters based on existing communities with self-formulated needs and wants. It sees a role for service designers to flexibly co-create such services together with and within such communities. In addition, the examples also show that the questions for design here are not solely social, because many of the human relations that were organised (or supported) in these examples are integrated with a social-technical

infrastructure (e.g., ticketing and checking-in operations), and with technical artefacts present in the interface (e.g., printed tickets and Facebook pages).

In the examples above of airline carriers, both design approaches may lead to interesting outcomes for users. But they also have pitfalls that can cause dissatisfaction and disappointment, especially in the human-contact part of the service experience. In the first case, because the need to control human behaviour would lead to heavily scripted actions that afford little room for a fruitful and constructive social dynamic among users and providers. In the second case, because the need to soften the grasp over human behaviours would mean that designers cannot influence the emergence of desired social dynamics beyond those that the communities themselves may have created inappropriately. Thus, a good service is not fully determined by the degree of control that designers exert over human relations. There may be situations where the desired level design control is more goal-directed and situations where it is more subtle and open-ended. For designers, the issue is not so much to decide whether or not to control the contacts among people in a service setting, but instead to know how to adequately put such control (or lack thereof) into effect in order to improve the social well-being of people in a service setting.

Case studies regarding work-related stress

In this paper we discuss a study that is part of a larger project GRIP, funded within the Creative Industry Scientific Program in The Netherlands (CRISP) with the initial members being the design schools at TU Delft, TU Eindhoven, Design Academy Eindhoven, and Philips Design. GRIP looks at how tight the designer's grip should be on the development of new services about work-related stress. Work-related stress was chosen as the field of interest because people who suffer from the effect of stress can be characterised by a 'loss of self' (loss of self-awareness, loss of sensing bodily reactions to stressors, loss of capacity to set priorities, etc.). In other words, stress is associated with people losing their sense of what they need or want, and they come to rely on others to help them in their struggle: family and friends, colleagues at work, and specialized coaches and therapists.

There is professional expertise about stress cure and prevention coming from medical and social researchers, company doctors, therapists, government bodies, unions, etc. This expertise can be deployed in service settings where expert coaches (providers) interact with clients suffering from stress (users). In some cases, such interactions are protocoled, for instance, when experts such as company doctors meet clients and their interaction has to meet medical and/or legal standards, or when experts introduce relaxation and bio-feedback methods for their clients. Design can play an additional role in improving existing stress relief services and in thinking up new services for balancing work-related stress. An important contribution of design is that it can create new material conditions that allows for a wholesome social dynamic among workers and other people in their vicinity.

In the beginning, we identified and worked with a group of consultants and institutions that had already developed expertise on work-related stress (or its euphemism: 'vitality at work'). Based on the cooperation, we worked with a selection of these experts to (re)frame the problem setting, define new types of relaxation and biofeedback technologies, and co-create speculative designs involving experts (stress researchers and stress relief service providers) and end-users. In this paper we focus on over 25 speculative designs that were generated by project members, mostly bachelor and master students from TU Eindhoven, working individually or in groups and receiving advice by design researchers and other industry

partners.[1] The projects were set up in a way to connect research to design outcomes through an iterative process described by Hanington (2003); this includes stages of desk and user research, scenario creation, pilot testing, expert reviews of documentation, prototyping and final testing. Each project lasted for a complete semester, with students spending most of their study-load on it. Over a period of two years four waves of projects were organised, allowing every half year for intermediate reflection over the designs and their underlying strategies for control over human relations in services.

The generated designs embody very different approaches to stress relief, depending on the specific interests and knowledge base of the design students, and their academic and industry partners in the project. After analysing all speculative designs, we selected three examples that best illustrate the range of strategic choices designers have made regarding control or flexibility over human relations in services (Figure 1):

(a) Little Devil registers how long office workers sit at their desk uninterruptedly. Placed on top of the desk, the object shows the progressive build-up of stress, up to a point where it 'chases' workers away from their desks.

(b) Co-Cup is intended for home workers to share coffee breaks with remote colleagues. They do so by drinking from smart cups that are connected to each other and to an application for casual video communication.

(c) The Beauty of Stress assesses aggregate stress levels of a group of workers over the course of the day. It provides feedback by publically displaying beautiful colour patterns.

Design strategies for balancing work-related stress

In this section, we will describe each of the designs identified above and analyse how they set the material conditions for human relations between people in a service setting. Our analysis is based on commonalities and differences found in the employed design strategies, and on expert and user insight captured at different stages of the design process.

Little Devil (design: Rhys Duindam)

Little Devil sits on a person's work desk and monitors the duration of his or her seated work activity. As one continues to work, the device starts to stretch, as a visible sign for how long the person has worked without taking a break. Then, after reaching a certain threshold, the device suddenly attracts a lot of attention by puffing and moving as if hyperventilating. At this point it will become hard for anyone close to Little Devil to continue working.

Little Devil aims to help people with stress through negative reinforcement (i.e., stimulating people to actively avoid reaching dangerous stress levels). The desired behaviour is for a worker to take regular breaks during a workday and to be intrinsically motivated to continue this behaviour. The solution provides insight into one measured parameter: the duration of uninterrupted seated work. By giving immediate feedback to rising stress levels, the worker is nudged towards taking action, by walking away from the desk and relaxing for a while. If the worker ignores this signal and passes a threshold, everyone close to Little Devil will be forced to temporarily stop working.

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[1] Some student groups split up their work to generate individual solutions, but in the end their work did not differ that much. Therefore, it is hard to provide an exact number of different designs that were generated throughout the project.

Figure 1. Three examples of speculative designs to help balance work-related stress: Little Devil, Co-Cup, and The Beauty of Stress.

Little Devil went through a number of iterations before it was developed into a working prototype. Initially, concepts were developed and evaluated by experts and users through interviews and user tests with the concepts. One insight was that 'people want to feel in control of their own stress management'. A specific concept called 'Blob' was highly popular because people appreciated its life-like character, and did not want to see it get hurt because they were stressed. Subsequently three different Blob concepts were developed (a cardboard model, and two working prototypes), and evaluated by experts and users to further explore shape, interaction and movements. This led to the insight that direct punishment would not motivate people to change behaviour (it felt like the object was in control of people's stress). However, a related but subtly different psychological principle of negative reinforcement might work as a motivational technique. For the final working prototype, ten different behaviours for negative reinforcement were developed and tested (ranging from shivering, to vibrating or playing cheesy songs). The final prototype of the Little Devil was used for a more extensive user test (of approximately 1,5 hours) with 6 participants.

Results of the user evaluations with the final prototype were promising. Strictly speaking, Little Devil is designed more as a product than a service, because its main interaction is between a user and a device. Nevertheless, the device visualises to others in the same room how someone's stress is building up, which triggered spontaneous conversations about stress with colleagues during evaluations. In addition, Little Devil's behaviour of hyperventilating means that it becomes a 'quasi-other' in its relation to users, inviting simulated forms of human-to-human interaction. By slowly becoming stretched, and through its attacks of hyperventilation, Little Devil acts as a mirror to workers who do not take regular breaks, and it nudges the worker and his/her colleagues to take breaks together.

Co-Cup (design: Marleen van Bergeijk)

Co-cup provides a physical connection between colleagues that work at different locations (i.e. in the office and at home). People working from home have less contact with their colleagues, and thus fewer opportunities for casual social interaction. The designer of Co-cup wanted to reconnect workers by bringing back collegial encounters. The solution was to connect distant colleagues by means of coffee cups that are linked to their laptops via a USB cup holder. When one employee decides to take a coffee break the cup is removed from the holder, and the coffee cup of other colleagues will blink as an invitation. The colleagues who receive the invitation can choose whether or not to react. If they pick up the coffee cup as well, the one who sent out the invitation will be notified by a light signal. If the coffee cup remains lighted, that means other colleagues are also taking a break at that very moment. The result is a collegial moment for co-workers located apart over long distances.

Co-cup is a connector, but it is also reminds employees of their work relations, and of the need to take breaks for informal contact. This is different from other individual solutions for break reminders, like RSI software. At the same time, Co-cup is deliberately chosen not to simulate face-to-face contact as part of a work assignment. Instead, it can be used next to existing electronic tools commonly used for work, such as e-mail, telephone, Skype, chat and

other internal work communication systems. The Co-cup concept symbolizes the essence of social communication in an abstract way – sharing a moment of thought together.

Initial work on the Co-Cup started with brainstorming and ideation. Many concepts were developed, out of which three were selected and developed in more detail, including a name, description, and contextual rendering or manual sketch. After obtaining feedback from fellow students, teachers, and designers from Philips Design, the coffee cup concept was selected as a direction for design. Four different scenarios were developed, varying in level of playfulness, and the type of communication that should be supported. These were evaluated by five users on criteria of communication, cooperation, isolation, disturbing environment, and relaxation. The evaluation showed that concepts would be of higher value for home workers than for office workers, and that social interaction in the office already happens, but has potential to be stimulated more. It was decided to change the concept from connecting two colleagues to interaction between multiple colleagues. This adds more value for users in the office environment; they become aware of the number of colleagues taking a break and can choose to join or not. Afterwards, a working prototype was built and demonstrated at two different occasions, resulting in positive feedback from experts and potential users.

Beauty of Stress (Design: Fabienne van Leiden & Jasper Schenk)

The beauty of stress registers the stress level of a group of workers who work under tense circumstances, such as journalists with a daily deadline. The system displays for the group the gradual, collective build-up of stress over the day. This is achieved by a droplet system of coloured ink in a transparent and backlit water reservoir. This water reservoir can be hung against a wall, creating an attractive feature in a workspace for everyone to see.

Each working day starts with the reservoir filled with clear water. As stress builds up, droplets of ink will start to fall into the water. Each droplet represents a set amount of registered stress for the total group of workers. The higher the stress levels, the more ink droplets will fall into the water. In this way, the water reservoir can display how stress builds up for the group, and how much stress has built up by the end of the day. The final prototype was not fully functional (i.e. the sensors for measuring the stress and the filtering mechanism based on activated carbon were not included), but the overall effect of the Beauty of Stress could be shown by manually applying ink droplets in water. Very positive feedback was obtained from visitors at the student exhibition at the end of the semester.

The Beauty of Stress was initially developed through four different concepts for stress relief (consisting of a description and sketches). These concepts were presented to other students and academic staff, who provided feedback and suggestions for improvements. Based on this feedback the initial design direction was chosen of a group stress display (i.e. a visible measure of the stress level of an entire group of workers), showing a build-up of stress by slow movements (to avoid feelings of panic). Three stress displays were explored and evaluated by the designers: moving bars, moving sprocket wheels and ink droplets in water. The first two were rejected because the lack of freedom in their movement might lead to boring visuals after a while. However, the ink in water would never look the same, and for this reason it was selected for further development. Interviews with potential users (newspaper journalists and school teachers) and questionnaires among a general public were administered to get further insight into people's feelings regarding stress measurements and stress displays in public working areas.

What is crucial for this system is that stress feedback is for the total group of workers, making stress reduction a shared responsibility. This was supported by two interviewees who stated that they would be fine with having their stress levels displayed if others at work

would do the same. Furthermore, they expected that an anonymous stress display will activate them to discuss openly about sources of stress, which could help to reduce their own stress level. Relying on this information, the designers wanted to enable people to talk about stress without directly referring to themselves, and to make colleagues aware of the existence of shared stress within a group. For these reasons the display provides an attractive visual, even after many droplets have been released (and the amount of stress registered for the group would be high). Finally, the system has no memory of its own and refreshes every day. The designers intended the cleaning cycle as a moment for the employees to reflect on their group stress levels and to use each day as a fresh opportunity for change.

Conclusions

Currently, the service design literature has a dualistic attitude towards the manipulation of human relations in services, professing either that such encounters should be controlled, or that they can only be supported after they have arisen by themselves. In contrast, we argued that the level of control over human relations does not by itself determine the quality of a design. Through the case studies, we showed how different gradations of designerly control over human relations can be exercised in practice, and that each design strategy shows interesting directions for innovative services to help balance work-related stress.

Over the three discussed projects, designers had different intentions to affect human relations between people at work. The designer of Little Devil aimed at promoting social contact among workers, and at making the device itself a relational device, since it acted as a social mirror for the user. Co-Cup was intended to provide home workers with tangible evidence of colleagues, and to facilitate to have informal meetings together. The Beauty of Stress aimed at making stress a more acceptable topic of conversation on the work-floor, seducing and urging people to treat work stress as a group responsibility. Over these examples, designerly control over human relations could be forceful or absent, ranging from humorous (yet brute) force to nothing more than a beautiful (yet evocative) feature on the wall of a workplace. Different levels of control over human relations could even be seen within a single design. In the case of Little Devil, workers and co-workers are left free in their individual or social responses to slow, continuous feedback in the background. But if this feedback is ignored, workers and co-workers risk being forced away from their desks. In all these examples, the designerly control of human relations in services has not been inherently good or bad. Instead, decisions about control of (versus flexibility towards) human relations has been a part of the designers' palette of choices, helping them to take up an important social challenge in an original way.

Our cases are student work of early conceptual design, with limited indications of their potential to lead to innovations with a strong social or commercial impact. Still, the initial reactions of workers to our three examples were positive, and they tended to accept the design's interference in the social dynamic at work. Reviews by expert providers were also positive, even if to a considerable degree these designs aimed for stress prevention, and thus reduced the need for expert intervention. Most users and expert providers believed that design's meddling into human relations had a social purpose, and that was meant for the good of a more balanced work life. This suggests that the degree of control versus flexibility in the design of human relations in services might be conditioned by the degree in which users and providers can accept the influence of designers to improve their social well-being.

Acknowledgments

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