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### People on The Other Side Are Waiting: Work Obligations and Shame in ICT-Related Technostress

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# PEOPLE ON THE OTHER SIDE ARE WAITING: WORK OBLIGATIONS AND SHAME IN ICT-RELATED TECHNOSTRESS

*Research paper*

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## Abstract

*With the pervasiveness of information and communication technologies (ICTs) in organisations, employees continuously interact both online and offline. This continuous interaction leads to the construction of norms and obligations around the usage of technology, which can also result in negative impacts on employees' health, for example, technostress. Previous Information Systems (IS) research on technostress has focused on psychological or neurophysiological quantitative research on the use of ICT and its effects. To our knowledge, there are no technostress studies that make use of the role of obligation, which in our view is a crucial lens, as it shifts the technostress debate to showing how the felt obligations constructed around the use of ICTs can lead to technostress. To further explore how technostress arises, we use the analytical concept of obligation from the discipline Sociology of Emotions. Our data comes from an exploratory case study in a Danish private company. We find that employees take on themselves the ideals of ICTs being seamless, and when ICTs do not live up to their expectations, they experience shame and guilt. To avoid such feelings, they construct obligations that lead to technostress. We contribute to IS research on technostress by showing how obligation contributes to technostress.*

*Keywords: obligation, technostress, ICTs, information systems, qualitative research*

## 1 Introduction

Technostress – defined as any negative impact on attitudes, affects, thoughts, behaviours, or body physiology caused directly or indirectly by technology (Weil & Rosen, 1997) – represents an increasingly important area of research within IS (e.g. Tams, Ahuja, Thatcher & Grover, 2020; Tarafdar, Cooper & Stich, 2019; Tarafdar, Maier, Laumer, & Weitzel, 2020). Research shows that ICTs (information and communication technologies) in organisations create technostress (Ayyagari, Grover, & Purvis, 2011; Tams et al., 2020; Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). A study following knowledge workers found that they spend an average of 5.5h daily on communication-related work instances (Wajcman & Rose, 2011). The amount of time employees spend using their ICTs makes the issue of looking closer at ICT-related technostress even more pressing. Taking email as an example of ICT, too little or too much email usage compared to what the employee desires increases technostress amongst employees (Stich, Tarafdar, Stacey, & Cooper, 2019).

However, intriguing research on email claims that it has become a symbol of stress that distracts us from what creates stress, which research shows is the norm of responsiveness around email use, and not the medium itself (Barley, Meyerson, & Grodal, 2011). On the same line of thought, Mazmanian, Orlikowski, and Yates (2013) argue that email use leads to the creation of obligations around using

email, as the knowledge workers experience a continuous tension between their autonomy and work obligations in the ‘working all the time, everywhere’ paradigm.

Past research on technostress assumes that technostress arises in the individual as a response to an interaction with technology (e.g. Riedl, Kindermann, Auinger, & Javor, 2012); or that we need to focus on the ICTs in order to identify the technostress stimuli (e.g. Ayyagari et al., 2011; Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2011); or that technostress arises in the static or dynamic interaction between the individual and the ICT (e.g. Sellberg & Susi, 2014).

These assumptions leave out the social arena, where work obligations (covert or overt) are negotiated (Clark, 1990; Ross, 1970); and norms around the use of ICTs are co-created (Mazmanian et al., 2013). We are opening up these past assumptions in technostress research and attempting to contribute to existing technostress research by looking closer at how obligations, duties, and responsibilities are shaping employees’ habits that lead to technostress. Furthermore, in this paper, we look at technology as an indirect cause of technostress, as we see ICTs as a means of bringing up other issues in the organisation that can lead to technostress.

We take the stance that employees construct some of the ICT habits that lead to technostress as a result of their felt obligations, and that the ICTs amplify social aspects. For example, enabled by ICTs, employees might apply the norm of responsiveness they act on during working hours to their free time as well, if they feel a covert or overt obligation to do so (Mazmanian et al., 2013). We argue that it is essential to make covert obligations overt in organisations to avoid negative consequences, such as techno-invasion, -complexity, -uncertainty, -overload, and -insecurity, which are all examples of technostress creators (Tarafdar et al., 2011).

We emphasise technology as an indirect cause of technostress. Much of the past technostress research argued technology as being the source of technostress (e.g., Riedl et al., 2012; Sellberg & Susi, 2014; Tarafdar et al., 2019). On the contrary, we argue that it is also the employees’ felt obligations that can lead to technostress, and thus technology plays a role in the background in our paper, while we bring the social environment in which obligations are co-constructed to the forefront.

This paper seeks to accentuate and contribute to the debate concerning technostress in Information Systems (IS) by using the sociological lens of obligation. We are seeking to answer the research question: ‘How do obligations contribute to ICT-related technostress in organisations?’ To conceptualise and analyse these issues, we look into how obligation (Clark, 1990), an emotional blend borrowed from the discipline Sociology of Emotions (Turner & Stets, 2006), plays a significant role in how we shape ICTs usage habits and perceptions contribute to technostress.

The empirical context of this paper is an exploratory single case study based on an international private company. We analyse verbatim transcriptions of our interviewees to find technostress perceptions and tease out the felt obligations that led to these perceptions.

We contribute to IS technostress literature by using the sociological theory of obligation on researching technostress. One of our findings suggests that employees take on themselves the ideals and norms of ICTs being functional and seamless, and they feel it is in their obligation that ICTs should perform. When ICTs do not live up to the ideal, employees experience feelings of shame, which leads to the construction of duty (a form of obligation). To avoid shame, one must have ICTs that are functioning. When they do not, this leads to technostress.

## **2 Technostress**

Being alive implies a constant response to stress, and stress reactions are not necessarily wrong. A certain level of stress is needed for motivation, growth, or development, also known as eustress (Selye, 1976), or as techno eustress (Tarafdar et al., 2019). However, unmanageable (techno)stress is damaging to both our mental and physical health (Cooper, Dewe, & O’Driscoll, 2001). Below, we present

four approaches to investigating technostress, inherited from organisational stress – response, stimulus, interaction, and transactional:

- The response approach views technostress as a dependent variable, for example, a response to a threatening stimulus, such as a computer breakdown or an IT error. This approach is based on neurophysiological measurements (Riedl, 2012; Tams, Hill, Guinea, Thatcher, & Grover, 2014), for example by measuring cortisol, also known as the stress hormone (Riedl et al., 2012), or heart rate variability (Schellhammer, Haines, & Klein, 2013).
- The stimulus approach focuses on identifying the potential sources of technostress, such as information overload, or blurred work-life boundaries (Ayyagari et al., 2011; Galluch, Grover, & Thatcher, 2015; Sarabadani, Carter, & Compeau, 2018; Tarafdar et al., 2011). For example, Ayyagari et al. (2011) found that some technostressors are work overload, role ambiguity, invasion of privacy, job insecurity, and work-life conflict.
- The interaction approach focuses on the technostress arising in the interaction between the individual and technology. Some studies find that for some people, technostress can add to their existing psychological stress (Hudiburg, 1989). One example is the interplay between employees and the different types of technologies that they need to relate to within a day (Sellberg & Susi, 2014).
- The transactional approach looks at stress not as a factor that resides in the individual or the environment, but one that is instead embedded in the ongoing process that individuals engage in, to continuously appraise stressful situations, make sense of them, and find the necessary coping resources. In technostress research, we see an example in Ragu-Nathan, Tarafdar, Ragu-Nathan, and Tu (2008).

In our paper, we take our departure from the transactional approach to define and explore technostress. At the same time, we expand this approach by arguing that stressful incidents arise not only in the dynamic interaction between humans and technology, but also as a result of employees’ felt obligations.

Furthermore, researchers point out two ways of measuring and exploring technostress – psychological and neurophysiological:

- Neurophysiological stress is a direct response to environmental stimuli that can be measured, i.e., an increase in cortisol as a result of an IT system error (Riedl et al., 2012).
- Psychological technostress is the result of an interaction between environmental demands and an employee’s conscious assessment of those demands, i.e., conscious self-assessment of whether the IT system error has caused felt stress (Ayyagari et al., 2011).

Research classifies technostress creators in five creating dimensions (or technostress creators), which we present in Table 1.

Form of technostress	Definition
Techno-overload	Employees face information overload and ICT-enabled multitasking.
Techno-uncertainty	Employees feel unsettled by the continual upgrades and ICT changes.
Techno-insecurity	Employees feel insecure about their jobs in the face of new ICT and others who might know more about these technologies.
Techno-complexity	Employees feel intimidated by using ICTs.
Techno-invasion	Employees never feel free of ICTs.

Table 1. Technostress Creators Based on Tarafdar et al. (2011)

Furthermore, there are also studies discussing technostrain. Salanova, Llorens, and Cifre (2013) define technostrain as ‘a combination of high levels of anxiety, fatigue, skepticism, and inefficacy related to the use of ICTs’ (Salanova et al., 2013, p. 2).

As we have seen in this chapter, there are two ways of measuring technostress: neurophysiological and psychological. In our research, we propose a third approach to exploring technostress: a sociological approach. We expand on this in the chapter related to our analytical lens, and we argue that it is not only the interactions between humans and technology that can cause technostress, but also the direct or indirect interactions around technology.

Although the concept of obligation in Sociology of Emotions is designed for face-to-face interactions (Clark, 1990), we are using it in a highly digitised context. We allow space for our interviewees to wander from the online to the offline and back again, to account for their realities of hybrid interactions, in semi-structured interviews. We have no particular questions in mind, as the intention is to work closely with them, the employees of the digital age, in a grounded attempt to find the answer to our research question: ‘How do felt obligations contribute to ICT-related technostress in organisations?’ We argue that Sociology of Emotions, and particularly the lens of obligation, can contribute to technostress research by showing how what we believe is our duty, responsibility, or what we owe to others, is what leads to situations of technostress.

### **3 Obligation as an analytical lens**

In our paper, we are utilising the concept of obligation as defined in the field of Sociology of Emotions. This discipline arose from the need to integrate emotions into the field of sociology (Kemper, 1990). In 1990, Candance Clark wrote a chapter in Kemper’s book (1990), where she proposes a novel way of looking at obligation.

Clark (1990) proposes that emotions can be used to negotiate a social place. A social place is a micro-level position, where those occupying higher places have more prestige, power, and interactional rights. Those in a higher position have the right to evaluate others, to be late, to have something more important to do, to ignore others, and so on. For example, monopolising others’ time by making them wait reflects and reinforces power differences. Micropolitics involves lines of actions to gain or maintain a social place. Clark defines several strategies through which people can negotiate social place. One of them is through eliciting obligation.

Obligation is defined by Clark as an emotional blend, meaning that one cannot pinpoint only one affect associated with obligation, but multiple. She argues that obligation is what makes people want to behave in a certain way towards others or society as a whole, emphasising that obligation is the feeling that we owe something to others (e.g., time, services), or that we ought to do something. At the same time, obligation can be imposed from the outside or the inside. We can feel inner obligations due to our desire to do things because it is moral to act that way or because we would feel better about ourselves.

From a micropolitics perspective, invoking a feeling of obligation in others is a way to inform and negotiate our social place with others. For example, duty is a form of obligation that makes people want to behave in a certain way towards others. If we do not carry out our duties, we might experience feelings of dishonour, guilt, or shame, or feelings of pride, satisfaction, or relief when we complete our duty. Responsibility, which Clark describes as ‘an account to self that includes affect surrounding the cognition’ (Clark, 1990: 324), is also a form of obligation where we feel we have to perform specific actions for others.

Shame can be a strong driver for constructing one’s duty. Shame is defined by Ahmed (2004) as being ‘witnessed in one’s failure’ (Ahmed, 2004: 103), and she further explains that shame can be intensified if the individual is looked at while experiencing shame. At the same time, when experiencing shame, the feeling is taken upon the self, rather than having it attributed to an object. Furthermore, the

fear of shame can prevent employees from betraying norms, while the lived experience of shame can remind the employee of the reason for those norms.

Another form of invoking feelings of obligations in others is alter-casting. An example is referring to the status of the other to make a role expectation more salient, e.g., 'Graduate employees are so motivated that they work even at the weekends'. If a new employee accepts the status of being a motivated employee, they might also have to accept the obligation the role entails.

In our analysis, we are focused on finding tensions in data of where obligations lead to technostress perceptions, by zooming in on duties and responsibilities that are taken for granted. We look at the technostress perceptions that our interviewees discuss when asked about technostress, and we tease out the obligations that led to that incident.

## **4 Methodology**

We are conducting qualitative research in the form of an exploratory single case study. Case study research provides an opportunity to investigate a phenomenon in a given context, which is useful in situations where the phenomenon is deeply entangled in the context (Yin, 2009). In our case, we are conducting an exploratory and interpretive case study looking into elements of technostress by exploring how obligations are constructed and experienced in the real-life setting of a company. In this exploratory case study, we conducted four semi-structured interviews, with each interview lasting 30 to 60 minutes.

We interviewed the director, a middle manager, and two employees from a company, as it was important to us to see how organisational members at different levels engaged in the construction and experience of obligations around the use of ICTs. As there is not much qualitative research on technostress to be inspired by, our approach was exploratory with an emphasis on how the interviewees frame and understand technostress, while allowing them to discuss what they found important (Bryman & Bell, 2011, p. 468).

We point out that perhaps a perceived limitation of single case study research is inherent in its singular nature. As Eisenhardt and Graebner (2007, p. 27) point out, a pivotal response to this perceived challenge is to clarify up front that we are interested in developing a new sociological approach in exploring technostress, and not to test it. They further argue that in a single case study, as opposed to multiple case research, the advantage is that rich data can be presented at length (Eisenhardt & Graebner, 2007, p. 29).

We perform text analysis on the verbatim transcriptions of the interview data. Although this could be perceived as a limitation for our case study, as we do not use more data sources than the interviews, we argue that on the one hand researching technostress from a qualitative perspective in IS is relatively new, and our focus is to look at how different concepts are made sense of by our interviewees. On the other hand, our focus is on the inter-relations; hence, we found the interview data to be most interesting. One way to strengthen this in the future is by coupling it with observations.

We conduct our analysis on verbatim transcriptions of the interviews by interpreting what the interviewees themselves describe as technostress. In that sense, we can claim that we are conducting content analysis (e.g., evoked emotions) (Wetherell, 2012). As Thoits (1989) describes, it would be difficult to conduct a thorough analysis of the interviewees' emotions, as even just five minutes of recorded footage would require a serious amount of coding of emotions, micro-emotions, tonality, facial expressions and other cues (Thoits, 1989). Wetherell (2012) believes that it is less interesting to define the relationship between affect and discourse, and more interesting to look into the affective assemblages and their social consequences, as affect and discourse are intertwined (Wetherell, 2012, p. 52).

## 5 Analysis

In this chapter, we give space to the employees' stories of technostress. We selected the most representative quotes related to repeated technostress perceptions and interpreted them by using the concept of obligation inspired by Clark's definition (Clark, 1990). These perceptions are what the interviewees understand as technostress. We started from technostress perceptions, from which we deductively derived obligations as opposed to inductively looking at obligations, as we wanted to focus on the relation between technostress and obligation.

In the following, we look into three themes that we interpreted as emerging from our data: multiple running communication channels, unlimited work, and resilience to technology, to investigate how felt obligations about technology create stress in the workplace.

### 5.1 Multiple running communication channels

While analysing our data, we noticed a recurrence in employees discussing the impact of multiple communication channels on their technostress; therefore, our first theme is 'multiple running communication channels'. In this chapter, we explore how the employees experience the existence of communication channels with respect to technostress. We look into how that constructs what they believe are their obligations.

- Formulating a given strategy

Below, the director discusses why he is using many different communication channels and how that affects him. The quote also refers to a company communication strategy, created to ease the problem, but which is not adhered to:

*'[...] during your daily work, you need to relate to a lot of input [...] So we have different kinds of communication channels. So even though that...that **we have tried to formulate a given strategy**, then so...**not all adhere to it**, for the...basically for the reasons that...that someone has decided that one-size-fits-all, but it does not. So **we still have the openness of several possibilities**, and that is definitely a stress factor.'* (Director)

The director describes the many communication channels he needs to use to do his work. He thus feels obliged to use the different communication channels, either due to each communication channel having a different purpose or due to his followers having different preferences.

Even though the company has a communication strategy, it does not appear to have been successfully implemented. A strategy to include norms can be seen as an obligation work on an organisational level by setting expectations of when to use which communication channels. However, this attempt is without success as '*not all adhere to it*', and it seems like the leader does not want to enforce it either, as the premise of one size fits all is not accepted. □

At the same time, he indicates his understanding of the employees not feeling obligated to follow the company's communication strategy, arguing that the reason '*someone has decided that one size fits all*' is not strong enough for the employees to comply with the strategy. Concurrently, this lack of obligation in employees, as well their leaders, leads to '*the openness of several possibilities*', which the director classifies as '*definitely a stress factor*'.

- Knowing where to address a given concern or question

Further, the director talks about the consequences of having several communication channels open:

*'That is definitely a stress factor – both keeping pace with it, but also um, you can say follow up or (how can I put it?) **knowing where to...to...to address a given concern or question or whatever**, which channel or which system that you*

*should be using. That...that gives some kind of, I would call it, anger, actually.'*  
(Director)

The director seems to feel that it is his duty towards his followers to know 'where to address a given concern, or question, or whatever', which leads to 'anger, actually'. In this example, it is becoming evident that while the director gives a strong indication of the technostress generated by multiple communication channel options ('that is definitely a stress factor'), his perceived duty of 'knowing where to address a concern' leads to anger, thus contributing to why it is stressful for him to have multiple communication channel options. At the same time, we could say that the reason for why the director feels angered when he does not know 'where to address a given concern, or question, or whatever' is that he internalises it as his duty to know this.

- The nature of my role

A middle manager presents another perspective of having multiple communication channel options, arguing that relating to all these communication channels as a manager is part of the 'nature of his work':

*'I asked my people what their favourite communication ways are. And I talk to them, I want to help them in any sense, so I don't have an operational role. I want to minimise the friction for them, so I don't force them to contact me on a specific channel. Instead, I adapt myself to whatever they prefer. [...] On my computer, I am running every possible communication tool, but yeah, it's fine. I don't have any issues with it [...] having Slack, Teams, Skype, Cisco, Viber, emails, open [...] that's the nature of my role... But it's better they are not distracted. [...] when I go home, actually, it's very sad to say, but I don't have the same energy.'* (Middle manager)

The above quote is a representation of obligation in the form of duty. He explains his duty rhetorically, contrasting I/them, illustrating his duty as a leader towards his followers, whom he calls 'my people': 'I asked my people'; 'I talk to them'; 'I want to help them'; 'I want to minimise the friction for them'; 'I don't force them'; 'I adapt myself to them.'

His perceived duty towards his people drives this middle manager to 'run (...) every possible communication tool', due to his interpretation of his duty: 'I need to talk to people', thus 'having Slack, Teams, Skype, Cisco, Viber, emails, open'. This is coupled with a sense of sacrifice: 'it's better they are not distracted', where the middle manager is using a comparative 'better', without emphasising both comparison terms, and this time focusing on 'they' but forgetting the 'I'.

However, when later asked about any changes in his perceived well-being, his answer is: 'It's very sad to say, but I don't have the same energy.'

- Moving reminders forward

An employee presents his experience about having to relate to so much input in the form of incoming emails and his solution for dealing with what he perceives as new tasks:

*'(the) most stressful thing is some things that you have to take some actions, but maybe not even now, you have to remember that next week you have to do so and so, and then you really have to be creative: okay, would I like to put something in my calendar? No, maybe not, because I still don't know which days it will be? Should I then open my outlook and make some reminder? And then it ends up in having every day, many times during the day, just a list of reminders. And then you have to consciously go one by one, and I delay this by one, this one by one week, this one by one hour. And then the next day again, you have to take those decisions, and then you realise you continuously spend time on moving those reminders forward. [...] And then, of course, it pops up in some unexpected*

**moments when you're really in the middle of something creative.'** (Employee 1)

In this quote, the employee feels a responsibility to act on specific requests and uses the technology to keep postponing the obligation of doing something. The way the employee explains what is going on and that it is (the) '*most stressful thing*' indicates that this way of dealing with demands is problematic. One of the reasons is that much time is spent leading to nothing: '*you constantly spend time on moving those reminders forward*', and that it prevents creative work as '*it pops up in unexpected moments when you are in the middle of something creative*'. Disturbances are known to slow down productivity as it gives a cognitive setback. At the same time, whenever a reminder pops up, the employee engages in extra cognitive processes of questioning what to do and planning tasks, which likewise takes up energy.

- Feeling expected to follow all of it. □

Further, Employee 1 describes how he feels expected to follow through with the requests, or at least decide whether the information received is something vital to him or not:

*'.. using these technology channels it's so easy, that **maybe some people overuse it**, maybe they don't think twice before actually collecting some bigger chunks of information as one item of information, [...] and it just creates more traffic, and then **you feel expected to follow all of it**. Or if even if you don't, you're curious - okay, **maybe something is important for me**, I better read this and check, and do something about it.'* (Employee 1)

This employee refers to the overload of information that happens as a consequence of the ease of communicating too much and instantly: '*maybe some people overuse it*'. The employee describes feeling like he would be missing out, due both to being curious and fearing that he might miss something important. We only see the latter one as an instance of obligation related to the duty of staying updated ('*what is important to me*'). However, both create different kinds of insecurity. As a consequence, this employee reads all to avoid the feeling of insecurity, thereby constructing his duty around continually staying up to date with what others are sending, even though he is conscious that '*maybe some people overuse it*'.

## 5.2 Unlimited work

Unlimited work is a theme that has been debated for many years. In the following quotes, we see an example of alter-casting that leads to firm work-life boundaries, as well as an example of obligation to be continuously available.

- Not feeling obliged to contribute more

The employee describes a manager that in the past has helped him relate to working in his free time in a way that he perceives as positive, and what that subsequently meant for him:

*'I had some specific manager, [...] the manager used to say: "okay, the day has only 8 hours, and the working week has only five days, you should not really feel obliged to contribute more, you still have family, private lives" – [...] "this is not the way to really keep you as a **valuable resource, that needs some rest and peace and quiet**." [...] And that was good, I had the feeling that I am being taken care of, that I am not being **vacuumed** into something that will **swallow** me at some point, and is escalating more and more, nothing like that so that I think that it was quite a luxurious situation. I hope for it to continue [...], so I think I'm stronger in the sense that when, just in case, when it comes to this situation that some new manager **expects more**, [...] I would use it as a negotiation point.'* (Employee 1).

The employee describes how he feels ‘*taken care of*’ when his superiors do not impose any obligation to work beyond working hours and how, on the other hand, if he has a manager who expects more and thereby imposes obligations in terms of expectations and duty, he could quickly feel ‘*vacuumed*’ or ‘*swallowed*’. The employee refers back to a manager who explicitly stated that working within hours was the expectation, and thus placed obligations through alter-casting that employees are ‘*valuable resources that need some rest and peace and quiet*’. The employee keeps this argumentation as a reason for how he should behave, what is expected, what his obligation is, and argues that if he ever experiences another manager who ‘*expects more*’, then he will refer to this earlier manager. This manager thus becomes a role model, and the manager’s speaking of employees as valuable resources becomes a mantra story.

- Feeling free to call

The director discusses work-life balance, his availability outside working hours and on holiday, as well as what he communicated to his employees about it:

*‘I have made it very explicit, telling people that I do not expect them to **check mail when they are off**, either on holiday or in the evenings or in...in the weekends. I try to refrain myself also sending out emails outside office hours. I would not say that I **succeed every time**, but I am trying to...to...I’m super much aware, so I’ll not do something like that. So to me, it’s about being available, basically. So though when I go on holiday, I have this “**out of office**” reply that I do not check my mail. I actually turn the notifications off on my phone, so I don’t **get new mail notifications** when I’m on holiday. But I have an option that **they’re always free to call me**. And, I may have experienced that once or twice, but people, in general, don’t. So they respect. But I think that it’s okay for them to know that it’s the position that I have, that it’s okay that they can reach out.’ (Director)*

The director describes that he has made it explicit that he does not expect people to ‘*check mail when they are off*’. Whether this is a common approach in the company, it is unclear. According to the employee’s quote above, it depends on the individual manager. The director’s statements show that he knows he is a role model, and he has to show what is wanted through his behaviour. In this way, he shows his understanding of his perceived duties, placing certain obligations onto himself. As a role model, he tries to ‘*refrain myself also sending out emails outside office hours*’, but the use of ‘*try*’ and the fact that he does not ‘*succeed every time*’ indicates that the obligation to set expectations is known but challenged by other needs.

Furthermore, the director is not saying anything about checking emails at night. Still, he says he uses ‘*out of office reply*’ when on holiday, so that he doesn’t ‘*get new mail notifications*’, which indicates that he feels an obligation to check his mail. Making himself available (‘*they are free to call*’) indicates he feels the need to be available if his employees need it. Checking emails and being available is possibly a feeling of duty due to his position as director.

### 5.3 Technology resilience

When operating online meeting technologies, an employee raises the issue of additional work in setting up, running, and not least troubleshooting when the online meeting technologies do not work as expected. These might be minor issues, however, and as the employee expresses below, they add up.

- People on the other side waiting

The employee provides an account of a stressful situation, that of having to prepare for an online meeting when the equipment does not perform as expected: □

*‘You can classify it as technostress [...] It’s not only that you’re getting angry and might act irrationally because of it, but well, if you’re in time pressure, say you’re*

*preparing for some meeting, it's in ten minutes, and you wanted to open some presentation and also some application, and also connect to some server, prepare everything on your screen to be ready, and something doesn't work, then, of course, it's irritating, and then you're really stressed, and pressed on time, and **of course the source it's the technology that doesn't work** as it is expected, [...] **people on the other side are waiting**, and they are writing on some other channels, "Are you there? We are waiting for you." (Employee 1)*

The employee describes a generally stressful situation for him, which he would classify as technostress. It is a situation in which he has to prepare for a meeting. Even though he arrives ten minutes in advance to ensure that the equipment is ready for the meeting, if something suddenly does not work, he feels stressed, and he is confident that *'of course the source is the technology that doesn't work as it is expected'*. Later, he describes how other people are waiting on the other side.

From the others' questions, it seems like they do not mention anything about the possibility of technology not functioning. On the contrary, they ask, *'Are you there?'* By posing these questions, the colleagues are alter-casting the expectations of their colleagues to be on time and prepared. In situations where the technology is not working, this interaction is the source of technostress, as the employee feels it is his duty to have everything prepared. He incorporates the performance of technology as part of his performance, and when technology does not work, he gets stressed. Not living up to expectations is shameful, and the feelings of shame might be intensified under the perceived gaze of the others (the colleagues waiting on the other side).

- It really takes much capacity

The employee further explains how the accumulation of minor technical issues can lead to employees having to use a lot of their capacity on troubleshooting them:

*'Even if it's a minor issue because we know by experience that even the minor issue, multiplied by the number of meetings during the day, multiplied by the number of days in a period, **it really takes a lot of capacity**, people spend their time on this kind of things instead of coming to the meeting and starting discussing productively... then of course if you don't do anything **it might only get worse.**' (Employee 1)*

As can be seen from the quote, technology handling takes up time, delays meetings and reduces what employees perceive as productivity. The way the employee talks about these issues reveals that *'it takes up a lot of capacity'*. The employee feels an obligation to take on this additional work and sees it as his and his colleagues' duties, which is a duty to make meetings work because if they do not, then *'it might only get worse'*.

- Individuals need to have more resilient behaviour

The middle manager talks about how technology is not perfect and how employees need to be more resilient:

*'.. the video conferencing technology, even state-of-the-art, **is not perfect**. This happens, so it's good to have some resilience to any failures. I don't think you can find anybody who says, like, "It never had a problem, it worked **like a charm!** [...]" So now it will be a kind of management talk, but as management, we try to solve these problems. So we invest in technology, better technology, **to make it seamless**. Of course, that's our duty. But still, also the people, the individuals, need to have a **more resilient behaviour** [...] to change and to be able to embrace change just as a fact of life, you can say.' (Middle Manager)*

The manager acknowledges that technology *'is not perfect'* and argues that it is a condition that the technology does not always work *'like a charm'*. He argues that people – his employees – need to be

‘*more resilient*’, meaning he is alter-casting the responsibility of his employees to stay open and handle the troubleshooting related to working with, e.g., conferencing technologies. The manager argues that resilience to deal with changes is part of life, thus alter-casting that changes and challenges are to be expected. Therefore, there is an expectation for the employees to deal with change, whatever it is. However, he also addresses the managerial responsibility (‘*our duty*’) to invest in technology ‘*to make it seamless*’. The obligation seen about conferencing technologies is thus balanced between management providing the best in the market and employees being resilient.

- Is it now that you need to address this, or should you wait?

The director talks about technological glitches and whether or not employees can be vocal about it:

*‘I know myself, can also be **super, super frustrated** if...if it’s something, “Okay, we have tried to change that, **it’s not possible to change that**. Let’s try to get the best possible out of this situation.” Even so, people are continually complaining about. [...] I also can be a little bit frustrated and stressed. [...] I do understand that, but we also need to move on, right and get it. So you get some slack, get on board, or I don’t know **maybe you need to find another job** if you continue complaining about it.’ (Director)*

In the quotes above, the director talks in general terms about changes and agile transformation as a current challenge. He argues as earlier that this is part of the current situation (‘*it’s not possible to change that*’). He argues that he, at times, feels stressed and frustrated and that he expects people to take responsibility for coping with change as part of the job. He puts it bluntly that people get some ‘*slack*’ in the beginning; however, if they ‘*keep complaining*’ then ‘*maybe you need to find another job*’. He communicates substantial obligations for his employees and himself (alter-casting) that, as an organisational member, you need to cope with change and the stress and frustration that follow.

## 6 Discussion

In the following chapter, we couple some insights we found in the analysis chapter with theory. We preserve the same subchapters as under the analysis chapter.

### 6.1 Multiple running communication channels

In our analysis chapter, we discussed how having multiple communication channels options creates technostress among employees. Although the source is shared, the director, the middle manager, and the employee have different experiences of how these multiple channels are causing technostress.

The director reports feeling angry about not knowing where to address a given concern. In technostress literature, feeling unable to keep up with changes in how to use ICTs is known as techno-uncertainty, and feeling overwhelmed by the complexity of ICT is known as techno-complexity (Tarafdar et al., 2011), both of which are technostress-creating dimensions. The director was not asked if he experienced these forms of technostress, nor did he hear about them before the interview. Still, he is reporting that having multiple communication channels options as a stress factor while reporting that not knowing where to address a given concern can even cause anger. One might take it further and ask why the director feels that he needs to know where to address a given concern. It seems like he is constructing a sense of duty of having to know, and it is the unfulfillment of this duty that is causing him to feel angry and to perceive multiple communication channels options as a stress factor. The director tries to avoid being seen as having what he perceives as his shortcoming of not knowing where to address a specific concern, and is not able to attribute the ‘badness’ to the technology, but taking the shame of failing onto himself (Ahmed, 2004).

The middle manager discusses his need to be flexible and use multiple communication channels simultaneously to minimise friction for his employees. He discusses techno-overload and ICT-enabled mul-

titasking (Tarafdar et al., 2011). At the same time, he discloses that he feels fatigued after working hours, which is a common symptom of technostress (Salanova et al., 2013). In his case, we can also see that his perceived duty of operating multiple communication channels at the same time is what drives his behaviour. □

Employee 1 reports techno-overload (Tarafdar et al., 2011) in the form of reminders that keep popping up, and techno addiction (Salanova et al., 2013), in which he is constantly checking emails out of curiosity or of fear of missing out. Employee 1 also reports feeling like he is expected to both read and act upon all of them, which shows what he perceives as his obligation.

It can be said that obligation in the digital age is constructed in a way that puts great pressure on employees: if technology can keep up with everything, then so should the employees. If technology can be accessible everywhere, then so should the employees in a way that transcends the human body's capacity. However, neurophysiology reminds our organisational members that they are not cyborgs, by triggering forms of technostress, stress, anger, fatigue, and confusion.

## 6.2 Unlimited work

Previous literature has reported blurred work-life boundaries as an increasing problem (e.g., Ayyagari et al., 2011); however, in our analysis, we see that the employee reports that he does not feel obligated to work during his free time. This is because a previous manager, who currently serves as a role model for him in this area, has inspired a change by letting him know he is a valuable resource and needs to rest when he is not at work. His current director is also very adamant about not being available on email during his free time.

However, we see a contrast in how obligation is constructed around the concept of availability outside working hours, where the employee only checks emails out of curiosity. At the same time, the director resorts to tricks to make space for himself. We call it a trick because he requires those who need him to call him, instead of being available on email. Calling requires more effort on the part of the caller and perhaps makes the caller feel hesitant to interrupt the director's holiday.

## 6.3 Technology resilience

Regarding technology resilience, the employee, the middle manager, and the director discuss the issue of technology not working as expected. We see in the chapter on technostress that even one IT error can create a spike in cortisol level (stress hormone) to such a degree that researchers can classify that as acute stress (Riedl et al., 2012).

The employee describes a typical situation of encountering ICT errors while preparing for an online meeting, despite his efforts. It seems like the employee is attributing the technology failure to himself, while the people waiting for him on the other side seem to also ask him about whether he is there or not, and not mentioning the possibility of technology malfunctioning. We could say here that the employee turns towards himself and is not able to attribute the 'badness' to the technology, and takes the shame onto himself (Ahmed, 2004). Shame might be the driving force for him in constructing his duty to perform in front of others and to live up to the norm of having functional technology. He does not seem to be able to shift the shame on to the 'other', in this case, the technology.

At the same time, from what the middle manager and the director have to say, it seems like the ideal is to be 'resilient', but one could ask – how resilient can we be in the face of technology? As Sellberg and Susi (2014) discuss, we are flexible, creative beings that have built rigid technological structures – and of course, the interaction between us and technology can lead to technostress (Sellberg & Susi, 2014). The middle manager and the director, at the same time, seem to be repeating the discourse that stress is the responsibility of the individual, which is also one of the earliest approaches to technostress: the individual is at fault for not being able to cope with technology (Brod, 1984).

One can also note that the type of technology malfunction reported by the employee is not the same type that the middle manager and the director seem to discuss. The underlying message from the middle manager is that one needs to be resilient, whereas the director takes it even further and mentions that one should move on and find another job. These subliminal messages can add to the construction of the ideals and norms in a company (Orlikowski, 1994). It can add to the shame experienced by those around whom technology cannot live up to the ideal, by taking upon themselves this 'lack'. This shame can heighten the sense of obligation, to avoid shame, that one constructs as one's duty to have the technology function, and when it doesn't, this creates shame, which is described by the employee as a perception of technostress.

We can see that the director is not spared this. It seems like his status does not affect his feeling frustrated and stressed. It can also be a matter of who is allowed to feel and who is not. It seems like the director creates the very same feeling rules that impact him, with the difference being that the others would need to find another job if they cannot live up to the ideals, which is a sign of a heightened social place (Clark, 1990).

## **7 Conclusion**

In our paper, we investigated the research question 'How do felt obligations contribute to ICT-related technostress in organisations?' through an exploratory single case study. We have employed the lenses of obligation, as understood by Clark (1990), thus emphasising that technology is an indirect cause of technostress while bringing the social environment to the forefront of our study. Technostress has so far been researched quantitatively, from either a psychological or a neurophysiological perspective.

We thus expand technostress literature by proposing a sociological perspective: obligation is at the core of what leads to technostress. We intend to shift the debate on technostress to showing how the felt obligations constructed around the technology can lead to technostress.

Among our findings, we note that employees take on themselves the ideals and norms of technology being functional and seamless. When technology does not live up to the ideal, they experience feelings of shame, which leads to the construction of duty (obligation) – to avoid shame; employees feel they have a duty to ensure the technology is performing. When it does not, this leads to technostress.

The use of obligation as a lens shows us that the feelings of obligation may lead to stress, but may also prevent stress. There is thus a need to be more aware of the obligations experienced and how these are often constructed unconsciously. Obligations are co-constructed between individuals, providing expectations and norms about how to behave. This understanding points to the handling of technostress as an organisational, managerial, and individual effort, rather than solely individual. Implementing technologies may change what is possible, meaning it potentially blurs our current practices and the limitations given by less flexible technologies. It also means expectations and norms need to be renegotiated to create obligations that are sustainable from a technostress perspective.

We contribute to IS technostress literature by using the sociological theory of obligation in researching technostress. One of our findings suggests that employees take on themselves the ideals and norms of ICTs being functional and seamless, and they feel it is their obligation that ICTs should perform. When ICTs do not live up to the ideal, employees experience feelings of shame, which leads to the construction of duty (a form of obligation). To avoid shame, one must have functioning ICTs. When it does not, this leads to technostress. Furthermore, we find that the feelings of obligation may lead to, as well as prevent, technostress. We further expand on our findings in the discussion and conclusion chapters.

## **8 Limitations and further work**

Our current study can be seen as a pilot and has the limitation of having a small sample when exploring ways of discussing and investigating felt obligations in the workplace. Its purpose is to test obliga-

tion as a lens to unfold and better understand technostress in the workplace. We would like to follow up by talking to more organisational members, coupled with observations, and returning to our informants and asking them more questions. This work may help us understand technostress from a sociological perspective, as well as ways in which organisations can avoid or handle technostress.

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