8-10-2019

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Johanna Sefyrin

Linköping University, johanna.sefyrin@liu.se

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Power/Knowledge and Gender in Information Systems Design

Johanna Sefyrin
Linköping University
johanna.sefyrin@liu.se

Abstract. This paper concerns the intersection of knowledge, power and gender in information systems design. This is explored with the help of Foucault’s concept of power/knowledge, and ideas from feminist technoscience studies, and studied in the context of an information systems design project in a Swedish authority. The aim of the paper is to explore how power/knowledge plays out in the everyday practices of an information systems design project, and how this is also a gendered issue. The analysis showed three different configurations of power/knowledge during the course of the business analysis as a result of shifting design conditions. The analysis contains no key, but the project clearly worked towards the enactment of some specific, and differently gendered, futures, which shifted with the different configurations of power/knowledge. The analysis provides an example of how in IS design projects, various realities are enacted, how some gendered realities are being explored, dismissed, and replaced by others. This illustrates how hopes for a better future among some gendered bodies might emerge, but also how these hopes – in the course of the the same IS design project – might be turned down, when other bodies and values become prioritized.

Key words: information systems design, gender, power/knowledge, gendered reality, design conditions.

1 Introduction

This paper seeks to intervene in ongoing debates concerning the formation of knowledge in information systems design. It considers how this is a gendered issue in terms of the gendered bodies that enact power and embody knowledge, and the gendered realities to which information systems contribute. In order to conceptualize and analyse these issues, research from feminist science and technology studies, information systems, and the works of Michel Foucault (1980) on power/knowledge will be used. The empirical context of the study is an information systems design (ISD) project in a government authority in Sweden. In ISD practices, knowledge is central, and those participating in information systems development are usually invited because they are

Accepting editor: Helle Zinner Henriksen
acknowledged to embody some sort of knowledge or skill that is valued in this context (Greenbaum and Kyng 1991; Bratteteig, 2004). How knowledge is understood and valued thus affects who is invited and acknowledged as a valuable participant in information systems design practices. But what kind of knowledge is important during different phases of ISD processes and how does this become recognized? Researchers interested in the intersection of information systems and gender have studied this issue from a gender perspective. Pirjo Elovaara et al. explore how it is related to differently gendered and situated bodies, and ask: Whose knowledge is included and excluded in design processes? (2006). Helena Karasti explores how expertise in information systems design is gendered, and asks: “How can dominant notions of ‘relevant expertise and view’ be challenged?” (2003, p. 36) Randi Markussen is also concerned about issues of knowledge in design, and asks: “What counts as legitimate arguments in negotiations in design? What makes a certain suggestion better? How do the designers negotiate their suggestions with the users, and how do they judge the contributions of the users?” (1996, p. 133) Discourse is one part of the answer to Markussen’s questions, but the concept of discourse can be understood in different ways. Here I will begin with Karen Barad, who – inspired, among others, by Foucault – writes that discourse “is not what is said; it is that which constrains and enables what can be said. Discursive practices define what counts as meaningful statements.” (2007, p. 146) More specifically, the aim of this paper is to explore how power/knowledge plays out in the everyday practices of an information systems design project, and how this is also a gendered issue. Based on the above definition of discourse, the research questions are: What design conditions made possible specific configurations of power/knowledge in the ISD project? How was power/knowledge gendered in the ISD project? The study draws on research from several different fields, such as information systems, science and technology studies, feminist technoscience, and feminist studies.

The term power/knowledge was coined by Michel Foucault who argues that power and knowledge are so closely entwined that there is good reason to write them together as one related concept. Foucault’s research concerns not only power/knowledge (1980), but also concepts such as discourse, the archaeology and genealogy of knowledge (1965; 1979; 1990/1978), and surveillance technologies such as the panopticon (1979). Foucault is recognized as a critical theorist in information systems research (Myers and Klein, 2011; McGrath, 2005), and although his work is not widely used in the IS field (Willcocks, 2006), there are researchers who in different ways use his concepts in the IS field (e.g., Avgerou 2000; Avgerou and McGrath, 2007; Doolin, 2004; Doolin and Lowe, 2002; Finken, 2003, 2005; Introna, 2001, 2003; McGrath, 2005; Myers and Klein, 2011; Willcocks, 2004, 2006; and, according to Willcocks
(2004; 2006), also Zuboff (1988), although only implicitly). Willcocks (2004; 2006) has conducted a review of the use of Foucault in the field of IS, and some of its reference disciplines, and found several interesting examples. Willcocks (2006) also exemplifies the approach, with Foucauldian analyses of IS as a discipline, and of surveillance and network technologies. Another example is Finken (2005) who, informed by Foucault’s (1980) concept of power/knowledge, explores how discourses in participatory design research make it possible to talk about users and designers in specific ways, and how discourses also constitute some IT design practices as relevant and true.

However, to my knowledge, there are no studies that make use of Foucault’s ideas in order to analyse power/knowledge in relation to gender in IS design. Willcocks (2006) argues that Foucault is unjustly neglected within the IS field, and underscores the relevance of several of his ideas for IS researchers. In feminist research, on the other hand, Foucault is both widely used and criticized, and a number of feminist researchers have underscored that power/knowledge is a gendered issue (e.g., McNay, 2013; McLaren, 2012; King, 2004). Hence, this paper attempts to make a contribution to the discussion about power/knowledge in information systems design research, by adding gender to this discussion.

Researchers interested in knowledge, power and gender have noticed that the issue of who is recognized as an expert in ISD is gendered, as is the issue of whose knowledge is included in or excluded from design processes (Wajcman, 2009; Elovaara et al., 2006; Karasti, 2006). A central argument is that who participates makes a difference, since participants are differently situated in material-semiotic networks, including those of gender (Haraway 1991), and hence bring different, gendered experiences, realities and voices to design practices (Haraway 1991; Oudshoorn et al. 2004; Elovaara et al. 2006). Researchers also underscore that gender and technology are mutually constituted, and that gendered bodies are expected to be differently interested in and knowledgeable about technologies (Wajcman 2009). To be more specific, this often implies that bodies and identities constructed and understood as masculine are expected to be interested in and know about technologies (Holth and Mellström 2011). For bodies and identities constructed and understood as feminine, on the other hand, it is much more problematic to have a positive relation to technologies, and here researchers underscore that such a relation often implies sacrificing one’s feminine identity (Corneliussen 2014). Hence, the expectations about which (gendered) bodies are expected to know, and not know, about technologies are gendered. Randi Markussen, who writes about knowledge in design, argues that “neither users nor the designers are subjects in the modern sense of the word, they are all subjected to the design conditions” (1996, p. 133), something which refers to how both designers and practitioners in design practices are being con-
structured by the various design conditions of which they are part, and which might sometimes be hard to change.

Researchers interested in information systems and gender also underscore that the realities produced by technoscience practices (Latour 1990; Woolgar 1990; Akrich 1991; Orlikowski and Robey 1991; Law 2004) are also inevitably gendered (Oudshoorn et al. 2004; Wajcman 2009; Åsberg and Lykke 2010). This is a reminder that, although reality is always gendered in terms of the existence of gendered bodies, and the gendered division of labour and hierarchies in homes and on labour markets, gendered economic structures and so forth (Butler 1993; Fenstemaker and West 2002; Gunnarsson et al. 2003), it matters how reality is gendered. If it occurs in a way that benefits some gendered bodies, expressions and practices and not others, this becomes a problem for those who are excluded, marginalized or otherwise made invisible (Butler 1993; 2004; Fenstemaker and West 2002; Gunnarsson et al. 2003, de la Bellacasa 2011).

2 Analytical points of departure

One central theoretical point of departure is the idea – stemming from feminist theorizing – that gender is done, enacted or accomplished in everyday practices (Butler 1993; Fenstemaker and West 2002; Gunnarsson et al. 2003). This concerns the possibility of studying how gendered bodies, hierarchies, divisions of labour, meanings and power relations come into being in everyday doings and practices, including those that concern the design and use of various technologies. An equally central point of departure is that gendered human bodies come into being in relation to a variety of other sociomaterial practices and bodies, both human and non-human (Barad 2003; 2007; Haraway 2004; 2016; Suchman 2007). Among these entangled relations, technology is important, and much in the research field of feminist technoscience shows that gender is done in relation to technology, and that gender and technology are mutually produced (Cockburn 1988; Wajcman 1991; Wajcman 2009). This is a critique of a more individualist view of humans (Barad 2003; Suchman 2007; Haraway 2016); a view in which humans are understood as constituted by, or becoming with, the relations of which they are part, and in which the human capacity to act is constituted and circumscribed by these entangled relations. From this perspective, intra-action among non-defined agencies, rather than inter-action between pre-defined actors, is a more adequate description of what is happening (Barad 2007). Such a view is also invoked when Markussen (1996) uses the concept of design conditions, to which the users and designers are subjected. Markussen does not elaborate upon this concept, and gives no examples of what design conditions might be, but here I use the term to mean conditions that are relevant to
specific design practices, such as economic circumstances, timespans and deadlines, the availability of resources, organizational structures and practices, discourses that influence the design practices, and the use of specific design methodologies. These and other conditions contribute to shaping what it is possible to do and say, and for whom, in design practices, and thus both designers and users are subjected to, or become with (Haraway 2016), these conditions.

A central focus among researchers who are interested in these issues is how expertise and knowledge in ISD is gendered; that is, who is acknowledged as embodying knowledge, and who can be understood as a knower in practices concerning the design of information technologies and systems (Wajcman 2009; Elovaara et al. 2006; Karasti 2006; Markussen 1996; Suchman 2002; 2005). Research indicates that women’s contributions and knowledge within ISD are often disregarded, with the argument that they are not in the position of being technical experts (Wajcman 2009). With these issues in mind, questions of participation also come into focus. Hence, scholars in this field of research focus on the absent and marginalized actors in technoscience practices, on how gendered realities are inscribed in different ways in information systems, and on the gendered consequences of this (Wajcman 2007; 2009). Examples are studies of gendered participation in IS design, and how this contributes to the unintended inscription of gender stereotypes into seemingly gender-neutral digital technologies (Oudshoorn et al. 2004), how gender and other aspects of reality are inscribed into information technology (Bath 2014; Sommervold and van der Velden 2017), the accountability of designers, and strategies for designing without inscribing fixed or naturalized notions of gender into designs (van der Velden and Mörtberg 2012).

Scholars in the field of (feminist) science and technology studies underscore that technologies are formative; they not only mirror an existing social order, but are designed within entangled relations of various agencies, and thus reproduce the existing social, economic, cultural and political relations – including gender, ethnicity and class (Latour 1990; Haraway 1991; Wajcman 2007; 2009; Bijker 2009)\(^1\). A central argument is that ISD practices enable some ways of acting, being, and living, and make other activities, and ways of being and living harder (Åsberg and Lykke 2010; Wajcman 2009; Scott and Orlikowski 2014), something which contributes to making some identities, positions and parts of the world visible, while others are rendered invisible (Bowker and Star 1999; Law 2004; Mol 2002; Löwgren and Stolterman 2007). These consequences are inevitably gendered, and affect gendered bodies in different ways (Åsberg and Lykke 2010; Wajcman 2009). The question of who participates in the design of digital technologies and systems is increasingly important as these technologies are becoming more ubiquitous and affect societies’ institutions, organizational practices
and human lives in profound ways (e.g., Brynjolfsson and McAfee 2014). This is also an issue for feminist technoscience scholars because it concerns how technosciences are becoming a more and more integral part of what it is to be human, something which inevitably involves being gendered. In the words of Judy Wajcman, “[d]rawing more women into design – the configuration of artefacts – is not only an equal employment opportunity issue, but is also crucially about how the world we live in is shaped, and for whom” (2009, p. 9).

With these points of departure in mind, it becomes interesting to further explore how knowledge is intertwined with other power relations in ISD practices, and the possible gendered consequences of this. In order to delve more deeply into these questions, I will use the ideas of Foucault (1980).

2.1 Power/Knowledge in IS design

With the works of Foucault as an analytical point of departure, we can never consider truth and knowledge to be innocent or unmarked by power; “truth isn’t outside power, or lacking power… Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power” (Foucault 1980, p. 131). Foucault (1980 1990/1978) views power not as something that emanates from individuals such as monarchs, or institutions such as the state, but as something that is distributed among all individuals, who contribute in different ways to upholding and reproducing hierarchies and institutions. For instance, Foucault writes about monarchs, that there is no power which is exercised by the monarch over individuals, but rather the monarch’s power rests on and is made possible by specific conditions and power relations that are already in place (1980). The same applies to state power, about which Foucault writes: “[T]he State … is far from being able to occupy the whole field of actual power relations … the State can only operate on the basis of other, already existing power relations” (1980, p. 122). Hence, the power of monarchs and states does not work in a top-down manner through which individuals are coerced into complying. Power, according to Foucault “is not built up out of ‘wills’ (individual or collective), nor is it derivable from interests. Power is constructed and functions on the basis of particular powers, myriad issues, myriad effects of power” (1980, p. 188). Power, in Foucault’s account, is related to materialities and structures, and works through bodies, architecture, places, practices, institutions, and procedures; it does not exist as an external force independent of individuals, but is rather enacted by individuals at the same time as it has effects on those individuals (Foucault 1980). Foucault does not dispute the existence of relations of power that are advantageous to some groups (such as class),
but underscores that “unless these unequal relations of power are traced down to their actual material functioning, they escape our analysis and continue to operate with unquestioned autonomy, maintaining the illusion that power is only applied by those at the top to those at the bottom” (Dreyfus and Rabinow 1983, p. 186).

Furthermore, for Foucault (1980; Dreyfus and Rabinow 1983) power is not primarily a repressive force, but rather is productive. In his studies of insanity (1965) and prisons (1979) he has shown how the definition and separation of the insane and the criminal also contributed to producing normality and expertise; through the production of apparatuses of institutions, procedures, and diagnostic instruments, and through the establishment of hierarchies of positions in which some are appointed professional experts and knowers, while some are laymen, and some are produced as normal while others are singled out as deviant. In a similar manner, Foucault shows how, from the 18th century onward, sexuality attracted increased interest from the state, and from medical experts in terms of rules about prohibited and acceptable behaviours and desires, and how, through detailed attention to sexual practices, and the prohibition of specific sexual activities, bodies were sexualized (1990/1978). Foucault shows that power is not independent of knowledge, but rather produces knowledge and knowers, expertise and experts, educational systems and institutions, systems of truth, and hierarchies of knowers in terms of experts and laymen (ibid.).

From this point of view, knowledge is produced within relations of power, including specific institutions, practices and procedures. Hence, for Foucault, power is inseparable from knowledge, something which has given rise to the concept of power/knowledge (1980). In this paper, Foucault’s thoughts on power/knowledge are central to the forthcoming analysis, and will be used to analyse how specific knowledge, held by specific knowers, was first understood as central, but then, later in the information systems design process, it became understood as less important, and even as a problem. Foucault’s analyses are conducted on a much larger scale than will be applied here, but his thoughts will be used as an analytical lens on the everyday practices of business analysis, or what I will call configurations of power/knowledge in the micro-practices of information systems design.

Translated into an information systems design context, the power relations by which knowledge is produced – and which in turn (re)produce specific power relations – include various design conditions in which information systems design takes place, and to which users and designers are subjected. Here, the focus is the kind of design conditions that are related to power/knowledge in information systems design.
3 Methodological approach

The study was conducted with the help of ethnographic methods (Thomas 1993; Aull Davies 1999; Myers 1999). Like other researchers who conduct ethnographic studies, I spent rather a long time (about six months) in the field organization in order to learn from the project that I was following, but I did not do this in an uncritical or unreflexive way (Aull Davies 1999; Myers 1999). Conducting an ethnographic study involved a period of fieldwork during which I spent two to three days a week for about six months as a participant observer in the studied organization, and in the studied IS design project. The IS design project in question took place in a Swedish public authority, and dealt with part of the Swedish social security system. The project started in September 2005, and I joined it as a participant observer almost at the start. I was present during the business process analysis phase, which lasted for about six months, and the business analysis was the main focus of my observations. Project meetings, discussions, workshops etc. were observed and recorded using an MP3 recorder, and some of the recorded dialogues were transcribed verbatim. Field-notes and photos were taken, and project documents gathered. In addition, interviews were conducted with several actors in the project, and every now and then I talked to the project manager, the method expert, and the project customer. This resulted in an extensive body of empirical material consisting of recorded work meetings, interviews and casual conversations, field-notes, photos, and project documentation. I did not participate as a systems designer, but as a researcher, and most of the time (at that stage I had just become a PhD student and had no previous experience of ISD) I was simply trying to understand what was going on.

Inspired by feminist technoscience studies, I was interested in unpacking things that are taken for granted and hence hidden in everyday IS design practices, such as gendered power relations related to the design of IS. Beginning with the idea that gender is done in everyday practices, and that gender and technology are mutually constituted, I was interested in how things are usually done, in everyday ISD practices, and I generally did not interrupt the practitioners during their discussions. When I did not understand, I asked questions when there was a break. I chose to be a rather silent – if not passive – participant in most of the work meetings. This kind of ethnographic study can be understood in terms of critical ethnographic research (Thomas 1993; Myers 1999; Madison 2011). According to Thomas critical ethnography “is a type of reflection that examines culture, knowledge and action … Critical ethnographers describe, analyse and open to scrutiny otherwise hidden agendas, power centres, and assumptions that inhibit, repress, and constrain. Critical scholarship requires that common sense assumptions be questioned” (1993, pp. 2–3).
3.1 Analytical framework

In terms of analysis, I had previously studied this empirical material from other angles in my (paper-based) PhD thesis, and in several papers included in this. I had observed how priorities in the project changed, and how this changed the status and positions of participants, with a focus on the case workers. Based on feminist technoscience scholars’ focus on how knowledge is gendered in relation to technology, now I was interested in how knowledge processes matter for what happens, in terms of how knowledge is constructed, understood and embodied, how knowledge is gendered, and how this relates to power. I used gender in relation to power/knowledge as an analytical lens through which the empirical material could be filtered and understood. From Foucault’s perspective (1980), knowledge is not obvious, but comes into being through situated, social, political, economic and material structures and practices. Hence, from the point of departure that gendered bodies, and knowledge, come into being in intra-action with other sociomaterial, non-defined agencies, Markussen’s (1996) design conditions seemed to me to be a concept that can include the various circumstances that might intra-act or become with, and hence exert some sort of influence or power over, gender and knowledge processes. I did not explore gender per se, but rather gendered knowledge; that is, knowledge embodied by gendered bodies, and the gendered consequences of ISD practices. My attention to gender thus mostly concerned the becoming of gendered knowers, and the gendered consequences to which the project seemed to contribute. So, the central analytical concepts were the following: gendered knowledge, design conditions, power and gendered consequences.

The first step in the analysis was to go through my recordings, documentation and field-notes, searching for examples of how the case workers were understood in terms of experts and knowers. When doing this, it was possible to identify three stages in how the case workers’ knowledge was understood and valued in the project. This also made it clear that knowledge did change, or was reconfigured, during the course of the project. But the question of how it became so remained—what made possible the reconfiguration of knowledge in the project?

The search for how this came about became a second step in the analysis, with the following question in mind: through what circumstances, or design conditions, did power function to reconfigure knowledge? More generally, I was searching for what made specific utterances and activities possible. Again, going through my recordings, documentation and field-notes, I searched for circumstances, practices, processes, decisions, dominant discourses, activities and methods that seemed to be entangled with and hence affected the knowledge processes, made them possible, and made them
change. It was possible to find a number of such design conditions, which seemed to be entangled with how knowledge was configured, and reconfigured. These circumstances seemed to have different consequences for how the participants in the project worked,
and for how knowledge was understood; so power, in Foucault’s terms, seemed to work through these circumstances. Finally, the consequences of the different project trajectories that were followed during the different stages of the process seemed to be gendered in different ways. These analytical constructs are summarized in Table 1.

Described in these terms, the analysis seemed to be a rather deductive process, based on a specific conceptualization of gender (gender as doing) and a specific conceptualization of the relation between gender and technology (mutually constructed). I also started to underscore in previous research how women are often marginalized in ISD, and in Foucault’s ideas of power, and how power is intertwined with knowledge. Nevertheless, the process was much more blurred than it appears to be in this account. When, as a recently accepted PhD student, I began collecting the empirical material, I had quite different expectations of what I might find; I was by then already interested in gender and IT, but I was thinking more along the lines of a gendered division of labour, and all of my expectations were turned upside-down, and I had to reorient completely. In order for this kind of analysis to work, there has to be a certain match between empirical material and analytical concepts (Creswell 2013), and I spent years searching for a way to analyse the empirical material in a way that would do it justice in the way I was seeking. There are many ways to conceptualize power, knowledge, gender and technology as separate concepts, not to mention the relations between them, and the ones presented here are those that I chose to use. Now that the analytical process has been presented, I will describe the field organization and the ISD project in more detail.

4 The empirical setting

The study focuses on an ISD project run by a public authority in Sweden. The authority administers a small part of the Swedish public social insurance system, and will here be referred to as The Insurance Authority (TIA). The forms of social insurance administrated by TIA all concern employment, and calculations of compensation are dependent on such factors as the number of years the beneficiary has worked, whether the beneficiary has worked full time or part time, was employed in the private or public sector, and issues such as periods of parental leave, and sick leave. At the time of the study (autumn 2005—spring 2006), TIA had approximately 320 employees, and among these, the largest professional group was the case workers, who constituted 200 out of the total of 320 employees. Of these case workers, 80 percent were women—an example of a gendered division of labour. These case workers were the ones who calculated the compensation due to the beneficiaries based on employment and the related information mentioned above. The project in focus was conducted as a business
development project, which included IS design, and was intended to improve the administrative process concerning social insurance that occupied most of the case officers at TIA. When administrating cases, these case workers used IS support in the form of ten different stand-alone systems, but since they were manually transferring information between these, there was a significant risk of errors in the administrative processes (cf., Sefyrin and Mörtberg 2009). Hence, it seemed that the case workers were indeed in need of better IS support. The IS design project started in September 2005 and was at that time called “Project IT support for case workers”. The project’s name indicates the focus and aim of the project; not only to develop new and improved IT support, but to do so in order to improve the work situation for the case workers working with this particular social insurance, who at that time lacked satisfactory IT support for their work. As we shall see, this was an initial aim, but after some time it changed, something which is central to the analysis. The project was extensive and spanned several years, and was considered critical for TIA.

4.1 The business analysis method

The IS design phase of the project included a business process analysis, and it was this part of the project that I followed. The business process analysis consisted of three steps: today, tomorrow (five years ahead), and the future (twenty years ahead), and these steps were conducted sequentially. The project objective was (initially) to improve the work situation of the case workers. These were considered experts in the work processes to be analysed, and two or three case workers took part in the business process analysis work, as experts in the administrative processes that were supposed to be improved (as domain experts, but this is my term; it was not used in the project). The administration of the specific social insurance in question was complex, and only the case workers knew the details and work practices surrounding the current system and the existing problems. These case workers had all worked for several years with case administration at TIA. Their first task was to analyse the existing administrative process, in order to understand how it worked, and from this analysis an understanding of the problems they were experiencing could be reached. The next step was to formulate requirements for a better system for tomorrow (five years ahead), and as a last step to formulate requirements for a better system in the future (twenty years ahead). As part of this work, paper prototypes of graphical user interfaces (GUIs) were used as a method to analyse the existing work practices and to develop ideas and requirements for a better system for tomorrow and the future.
4.2 The participants

By the start of my fieldwork, a project team had already been formed and the business analysis had only just begun. There was a project organization consisting of a project team, a project manager who managed the day-to-day work of the project, in terms of acquiring project resources (competent participants, time) and coordinating actors and activities, and a project customer who was ultimately in charge of the project resources, aims and outcomes. There was also a project steering committee. The customer was in charge of the project as a whole, its results and the resources that went into it. The customer was one of the higher directors in TIA, but he was relatively inactive during this phase of the project (the business process analysis phase), and his responsibilities were temporarily passed on to a delegated customer, who was lower in the organizational hierarchy, but nevertheless in charge of the customer’s responsibilities. About three months after the outset of the project, this delegated customer was replaced by another one, who initiated some profound changes in the project, something to which I will return. During the business process analysis, the main actors were those conducting the business analysis. For lack of a better term, I will call them business analysis (BA) participants; none of them had the formal training or professional position associated with the term business analyst, but they were nevertheless conducting a business analysis. The BA participants consisted of five to six persons, all employed at TIA, and within the context of the project they were all considered qualified by their different knowledge bases to participate in the business analysis. The BA participants, who were at the time working full time with the business process analysis were the following:

- Three case workers and experts in the existing administrative processes and systems in focus. These were all women who had worked in different parts of public insurance for many (5–20) years, and brought to the business analysis in-depth knowledge of the case administration process, although each of slightly different character. They were currently spending their time on the project instead of working on their ordinary case administration tasks.
- A position called business client, supposedly acting as a link between business and IT. The business client was a man who had recently obtained a university degree in information systems, and was expected to be able to speak the language both of IT experts and business experts. He had no previous experience of case administration, and kept a low profile during much of the business analysis work.
- An expert in graphical user interfaces (GUIs). This was a rather young and uneducated man, but he was nevertheless the expert in GUIs at TIA. He had previously been working as a case worker at TIA, but in this project, he was in
charge of developing the GUIs that were used in order to develop improved case administration practices. Due to his experience as a case worker, he could discuss the case administrative process with the case workers.

- A method expert, who was the day-to-day leader of the business process analysis. This man had developed the business development method, including the business analysis method that was being used in the project. He had no previous experience of case administration, and had to rely on the case workers for this.

After this brief presentation of the participants in the business analysis, I will now present the empirical material, along with an analysis of this material.

5 Analysis of power/knowledge and gender

In this section, the business analysis process and the previously mentioned change in the project will be presented, and analysed. The analyses will be framed in terms of three different configurations of power/knowledge, and each configuration will be analysed in terms of the chosen analytical concepts: gendered knowledge, design conditions, power, and gendered consequences.

5.1 First configuration of power/knowledge

Here the analysis of the first configuration of power/knowledge will be presented, starting with gendered knowledge.

Gendered knowledge. When the project started, the BA participants had daily meetings, during which they tried to map how they were currently working with the administration of the specific insurance that was in focus. During these meetings, the case workers answered questions and told the other BA participants (the business client, the GUI expert and the method expert) about their work, rather than posing questions. There was usually a specific structure to the discussions that took place during the work meetings, a structure in which the case workers helped each other to disentangle the intricacies of the administrative process, while the other BA participants asked questions. The GUI expert, who had previously been a case worker, could contribute to those discussions, but the other case workers were more senior than him and possessed more detailed, in-depth, knowledge. The business client had no previous experience of case administration and kept a low profile. The method expert knew about the method and
was leading the work meetings, but he also had no previous experience of case administration and had to rely on the case workers for this.

Hence, during these work meetings the case workers were *those who knew* about the administrative process, they knew the details of how it was currently done, about the mainstream administrative process, and also about all of the exceptions and special cases involved in this process, about the different stand-alone systems that were currently used in order to administrate cases, and about the problems that the administrative process involved. In other words, during this first period of business analysis, the case workers seemed to be central as knowers, and without their knowledge not much could have been achieved.

**Design conditions.** There were several circumstances, or issues, that seemed to influence the business analysis, and the positions of the BA participants. One issue was related to the development of e-government in the Swedish public sector, and the discourse related to this. When the project ‘IT support for case workers’ was initiated at TIA, this was at a time when a number of policy documents and guidelines had been published, setting up political aims and directions for how e-government could be understood, and how it could contribute to the Swedish public sector. The discourse of e-government seemed to open up the possibility of developing better public services at lower cost, with the help of information systems (Bekkers and Homburg 2007; Axelsson et al. 2013; Hood and Dixon 2015; Verne 2015). This was an explicit aim formulated by the Swedish government, so there was pressure to conform to the norms of digitalization that were in the process of being established. This discourse opened up the possibility of designing administrative support systems of this kind, and the project at TIA was one of many that were underway in the Swedish public sector. The e-government discourse made the project possible, and in this enactment of e-government, employees were understood as central, and it was their work practices that were to be supported by a new information system.

Another issue was the fact that the entire project was aimed at improving the administration of a specific insurance and, moreover, this was done with the recognition that case workers at TIA currently lacked satisfactory IT support for their administrative practices. This placed all of the case workers at TIA in a central position; the project was being conducted for their benefit, while at the same time only they knew about the problems with the current administrative process, and could provide detailed suggestions for an improved process. The decision to include a number of case workers in the business analysis process supports the view that their work situation was the focus, and that they also embodied the knowledge needed to do something about it—in terms of
a better administrative process. Also, the project focused on the insurance that occupied
the largest group of case workers, and a more efficient administrative process would
benefit not only the case workers, but the entire organization. As in many Swedish
public sector organizations (Swedish Statistics 2016), there was a gendered division of
labour, and a large proportion (80%) of these case workers were women.

Furthermore, the project method, which initially focused on the current adminis-
trative process (today) and the problems it involved, worked as an influential design
condition, which placed the case workers at centre stage. This was a situation in which
the knowledge that the case workers embodied, and tried to explain to the other BA
practitioners, was central to the ability to move on with the business analysis, and hence
with the entire project.

In this paper, these issues are understood in terms of ‘design conditions’ which con-
tributed to placing the case workers and the knowledge they embodied in a central
position within the project.

**Power.** Foucault (1980) views power as something that works through materialities
and structures, institutions, procedures, practices and bodies; it is enacted by bodies, at
the same time as it has effects on bodies. In this design project, the design conditions
worked in order to position the case workers as central knowers; hence, power, in the
Foucauldian sense (ibid.), seemed to work through these design conditions in the form
of an e-government discourse in which the development of the public sector could be
interpreted in terms of developing an information system to support current employees
and their work practices, the practices of formulating and communicating a project
aim, gendered divisions of labour at TIA, and the practices of the project methodology,
which began with a focus on exploring the case workers’ current work situation.

**Gendered consequences.** In terms of the possible gendered reality that might follow
as a consequence of the project, this first configuration of power/knowledge seemed to
indicate a rather stable employment and an improved work situation for the case work-
ers at TIA. The gendering of this possible future was related to the current gendered
division of labour at TIA, which hence contributed to power/knowledge and gender in
the project. However, as we shall see, this configuration of power/knowledge was not
entirely stable.

**Power/Knowledge.** The argument here is that the configuration of the analytical
constructs, that is, how they came into being and were entangled within this specific
phase of the business analysis—gendered knowledge, design conditions, power and
gendered consequences—can be understood as one specific configuration, not only of knowledge, but of power/knowledge, in Foucault’s sense (1980). By this I mean that power in the IS design project, as it worked through some important design conditions, constituted what knowledge was; that is, what could be understood as—relevant and central—knowledge. In this configuration of power/knowledge, this was knowledge about the current administrative process.

5.2 Second configuration of power/knowledge

The first configuration lasted for about three months of the business analysis, but then things changed, and this resulted in a second, different, configuration of power/knowledge.

Gendered knowledge. The project continued, and the case workers and their knowledge remained central to the business analysis process. Now, the BA participants were no longer mapping the current administrative practices, but exploring possible different and better practices. In this work, the GUI expert developed computer-generated images of graphical user interfaces (GUIs); consequently, his knowledge was required, and he became more central to the work. It seemed as though the point of departure was still the current administrative practices, and the case workers’ knowledge was still as central as previously, but now the focus had shifted to developing a new system that would replace the current one, and other forms of knowledge also became important, such as developing GUIs for a new system. These changes were related to partially different design conditions.

Design conditions. At the beginning of the project, there was no explicit talk about automation (cf., Sefyrin and Mörtberg 2009), but both objectives were described in the written project description. Initially, the improvement in the case workers’ work situation was communicated as the main objective, but about three months after the project started, the second objective became acknowledged as the main one. At that time, a new delegated project customer was appointed, and he openly stated that the prioritized objective was to automate as much as possible of the administrative process. The BA participants were informed about this, but the project name remained the same: ‘Project IT support for case workers’. Furthermore, the business analysis moved from a focus on analysing the current administrative practices, to explorations of alternative, different, and better practices for tomorrow. In terms of the business analysis method,
this was a shift of focus, from current practices (today), to the practices of tomorrow (five years ahead).

In relation to e-government, researchers in this field emphasize that even if e-government initiatives and discourses concern improving public services, a primary objective is nevertheless to rationalize public organizations in order to cut costs and minimize public spending (Bekkers and Homburg 2007; Gidlund 2015; Persson and Goldkuhl 2010; Hood and Dixon 2015; Axelsson, Melin and Lindgren 2013). The project that I was following mainly concerned the development of an internal, organizational IS at TIA, and was not aimed at citizens or other customers of TIA, but nevertheless it was part of the ongoing transformation of the public sector with the help of information systems. A number of policy documents at both the national and EU level had been written about this, outlining goals and guidelines for this development (Government Proposition 1997/98:, p. 136; Government Proposition 1999/2000, p. 86; Swedish Government Official Reports 2003, p. 55; Swedish Agency for Administrative Development 2001, p. 21; European Commission 2003; Commissions Communication 2002). These documents are full of optimistic formulations and hope about the benefits that information systems will bring to public organizations (Bekkers and Homburg 2007; Hood and Dixon 2015). For someone who knew about this, it would come as no surprise that the project’s stated aim to improve the work situation for the case workers was not the only one, but that the project also aimed to automate the administrative process.

The change in the project objective from a focus on IT support for case workers to automation of the administrative process, the methodological move from a focus on current practices to explorations of alternative and better practices, and the interpretation of e-government as something that concerns cutting costs through automation, are here understood as design conditions.

**Power.** Power, in a Foucauldian sense (1980), worked through similar design conditions as in the first configuration of power/knowledge, but there were some decisive shifts. One was the practice of changing the project aim, or communicating an aim that had not previously been communicated (cf., Sefyrin and Mörtberg 2009). This changed project aim, with its focus on automation rather than the improvement of the case workers’ work situation, was related to another design condition; that of (another enactment of) the e-government discourse, in terms of making public administration more efficient with the help of information systems. In this enactment of e-government, information systems were not necessarily intended to support employees, but rather to replace (some of) them through automation. This enactment of e-government
was related to pressure to cut costs in the public sector, and not only to maintain and improve the current level of service. Furthermore, the methodological practice of shifting from a focus on today to a focus on better administrative practices for tomorrow, with the support of an information system, and to conduct these explorations of a future information system with the help of prototypes of GUIs, required knowledge about how to design them. All of these design conditions contributed to placing the case workers in a less central, less stable, position than previously.

**Gendered consequences.** In terms of gendered consequences, and of the gendered reality to which the project seemed to be contributing, this configuration of power/knowledge indicated a more uncertain future for the case workers than the first one—a work situation in which some case workers might lose their current employment. Since the occupation of case worker at TIA was gendered, with a high dominance of women, this was also a gendered future, although in a different way from the first configuration of power/knowledge. The case workers were disappointed, something which becomes obvious in the short excerpt from a discussion, below, between two case workers during a work meeting with several other participants (the excerpt has been edited in order to make it more readable).

Case worker 1: We [the case workers] believed that the ‘IT support for case workers’ [the project] should be helpful [for us, the case workers] with graphical user interfaces and maybe calculations, that’s what the ‘IT support for case workers’ is for us if we look at the project description.

Case worker 2: So the things that we committed to, graphical user interfaces and things that should be aids for case workers … it’s just gone.

This short dialogue shows that the case workers realized that the future for which they had worked in the project, now would not materialize

**Power/Knowledge.** In terms of power/knowledge, this can be viewed as a second configuration. The new project aim of automation had made it clear that it was no longer the work situation of the case workers at TIA that was central, but rather that there was an organizational perspective. This changed the position of the case workers in the project, and raised questions about what they were in fact contributing to, and where their loyalties lay. Also, the methodological shift from a focus on current administrative practices, to explorations of alternative practices supported by an information system,
required the additional knowledge of the GUI expert, and the case workers were no longer the only, or primary, knowers. It seems as though, under this configuration of power/knowledge, the project still needed their form of knowledge, but their position was weakened. This concerns what constitutes knowledge, and whose knowledge is required, and it is also related to power.

**Ambiguities and tensions.** When the project aim changed to automation of the administrative process, it became evident that it was no longer the case workers’ work situations that were central, but rather the efficiency of TIA as an organization, in which the administration of the particular insurance in focus was the largest administrative process. Automation of the administrative process raised questions about what would happen to the case workers who currently worked on the administration of this insurance. Would they lose their jobs? Were the case workers who contributed as BA practitioners in the project in fact contributing to the development of an automated information system that would lead to making case workers at TIA unemployed? In other words, questions of loyalty and belonging emerged, and it could be questioned whether the case workers and BA practitioners were loyal primarily to the group of case workers at TIA, to the management who wanted to automate the administrative process, or to themselves, if participation in the project involved the possibility of improving their own careers. Were these case workers being used by the project, which needed their knowledge but was no longer working for their benefit?

### 5.3 Third Configuration of Power/Knowledge

The business analysis process continued, the new project aim of automating the work gradually became more established, and the BA process moved on from explorations of a better information system for tomorrow, to explorations of an information system for a future far ahead—twenty years in the future. In other words, the design conditions changed.

**Gendered knowledge.** During a project work meeting about two months after the changed project focus, the GUI expert asked: “but why is it so interesting how it looks in CICS today?” CICS was an acronym for one of the systems that the case workers were currently using. In other words, the GUI expert was asking why it was important to know something about a current system in order to develop a new automated system. This question shows that it had become less important to know about the current administrative practices and support systems in order to perform the business
analysis. In a later project work meeting, the BA participants discussed the details of
the administrative process; where information should be stored and how it should be
made available to users. Present at this meeting were one of the case workers, the busi-
ness client, the method expert, the GUI expert, and me and my MP3 recorder. Below,
a short excerpt from the meeting is presented (the excerpt has been edited in order to
make it more readable).

Case worker: [Discussing a detail about information storage] You’re sitting so far
away, Ulf.

Business client: I feel like I, I feel like I, don’t have that much to contribute
[seemed embarrassed about this].

Case worker: But you can sit over here? [Points to a chair closer to her]

Business client: Yes. [Moves to the other chair]

Case worker: But you should think like this, that it’s really you who have the
most to contribute, because I’m still locked into our old system, it’s like, it’s like
someone who is totally new who should sit here—and suggest how it should
work in the future, so that I can understand this; I’m locked into what can and
cannot be done in the CICS system.

GUI expert: [Mumbles something inaudible]

Case worker: I’m still locked into how we do it today.

So, what happened here? This particular case worker was the most senior of the three
participating in the project; she was also senior to the business client both in age and
in terms of the number of years she had been working at TIA. She had a strong posi-
tion in the project, and a lot of knowledge to contribute. The business client had kept
a low profile during the BA process, and here he admits that he does not think he has
much to contribute. Was the case worker trying to be nice to the business client, who
seemed to feel useless, and embarrassed about this? Perhaps, but she downplayed her
own competence in favour of someone who was “totally new”; that is, someone without
previous knowledge of the current system, and argued that such a person could explain
to her how it would work, because she did not understand. Instead, she claimed that
she was “locked into how we do it today”. Now it seemed as though her knowledge of the current system was no longer an advantage, but a problem. Instead, she seemed to think, it was an advantage not to know about the current system.

**Design conditions.** What made this question and dialogue possible? What had changed compared to previously? At this time, the new delegated customer had been communicating the new primary project aim, that of automating the administrative process, for two months, and it was quite clear that this aim followed the dominant aspects of an e-government discourse which promises better public services that cost less, with the help of information systems (Hood and Dixon 2015; Axelsson, Melin and Lindgren 2013). Furthermore, the BA method had moved from explorations of alternative administrative practices for tomorrow (five years ahead) to a focus on a distant future (twenty years ahead). This shift of focus from tomorrow to a distant future seemed to invoke the discourse of e-government as technological innovation in the public sector (Janssen and Estevez 2013; Hood and Dixon 2015). However, the kind of innovation discourse that emerged at this point in the project seemed to be based on a rather technical point of departure, and is far from self-evident. Feminist innovation researchers have discussed how innovation is often understood as a process with a technical focus, and underscored that the women involved in innovation processes are not always recognized (Suchman 2002; 2005; Alsos et al. 2013; Pettersson and Lindberg 2013). Innovation researchers argue that innovations consist of “new combinations of existing knowledge and resources” (Fagerberg, et al. 2012; Peschl and Fundneider 2014). Suchman (2002) argues that new artefacts and practices grow out of old ones; they do not appear in revolutionary steps, but instead grow out of “an ongoing interaction between understandings based in prior experience on the one hand, and leaps of faith inspired by imagination on the other” (Suchman 2002, p. 100). Thus, innovation does not come from thinking along new trajectories, while at the same time disregarding the existing ones. Suchman (2002, p. 100) writes that: “innovation is mythologized as the rejection of things past. If current practices using existing technologies are assumed to be stagnant until the professional designer appears on the scene, the designer’s ignorance becomes his or her credential.” This is exactly what happened here; being ignorant of the current became a credential, and knowing about the current became a problem.

**Power.** In this third configuration of power/knowledge, power worked through design conditions such as the establishment of the new project aim, fuelled by the e-government discourse, and the methodological move from a focus on a system for tomorrow,
to an automated system in the distant future, something that also seemed to invoke a
discourse of e-government as technological innovation. Together, these contributed to
destabilizing the case workers’ position and to moving their detailed knowledge about
current administrative practices and their problems, along with their need for a better
system, to a more peripheral position. From the point of view of the configuration
of these partly changed design conditions, the case workers’ need for a better system
seemed less relevant. Instead, another kind of knowledge seemed to be required, that of
being able to imagine something quite different from the existing systems.

**Gendered consequences.** In terms of gendered consequences, this configuration of
power/knowledge indicates a future in which the case workers’ position at TIA was
clearly unstable. What at first seemed to be a project aimed at improving the work
situation of the case workers turned out after about six months to be a project that
instead aimed to replace them with an automated information system. This was a quite
different, and differently gendered, possible future than that existing within the first
configuration of power/knowledge.

**Power/Knowledge.** In terms of power/knowledge, this can be understood as a third
configuration. In the first configuration, the case workers’ knowledge was indispensa-
ble, in the second configuration they remained central, but so too was the GUI expert,
and now, with the third configuration of power/knowledge, it seemed as though their
knowledge of current administrative practices had become irrelevant.

6 Gendered knowledge, gendered realities

The analysis illustrates how specific design conditions (Markussen 1996) produced the
need for different knowledges—and hence levels of participation—during the business
analysis process. Consequently, the different configurations of power/knowledge ena-
bled different views of what knowledge and expertise were in this context, and hence
highlighted different needs of knowing bodies and participation. In other words, the
analysis illustrates how power and knowledge were intertwined in this specific business
analysis process, to the point where it becomes meaningful to use Foucault’s (1980)
term power/knowledge. At the level of the micro-practices in this information systems
design project, the shifting design conditions contributed to configuring temporary
and unstable hierarchies of knowers and expertise.

In relation to gender, the analysis also illustrates that power/knowledge was gen-
dered, in terms of how knowledge was embodied by gendered bodies, and furthermore
in terms of how power/knowledge during this design process contributed to the materialization of differently gendered realities. After about a year, the project was renamed, from “Project IT support for case workers” to “Project automated awarding”, confirming the change towards automation. By then, the original project manager had also been replaced by another. Even so, this paper does not draw any conclusions about the results that emerged after the business analysis process; there is no key as to what happened after the project. Nevertheless, it seems clear that different potential futures were enacted during the project. In one of those potential futures, the one related to the first configuration of power/knowledge, the possible future that seemed to be enacted promised a better work situation for the case workers who were employed at TIA. At the time the project began, they were working with several different stand-alone systems, transferring information between these, and there was a risk of errors in the process of administrating cases. They needed a better information system to support their work tasks. At TIA, there was a gendered division of labour, and these case workers were mostly women, as is often the case in the Swedish public sector (Swedish Statistics 2016). This possible future was related to a rather traditional, Scandinavian view of what information systems are supposed to do in an organizational context; to support employees and their work practices (e.g., Greenbaum and Kyng 1991; Bjerknes and Bratteteig 1994; Kensing and Blomberg 1998; Bratteteig 2004).

However, this possible future was not maintained throughout the course of the project, but instead the design conditions shifted, and other configurations of power/knowledge were enacted, indicating other possible and gendered futures. The second configuration of power/knowledge indicated a destabilization of the first, and in the third configuration, this destabilization was confirmed, and hence another possible future became more ‘real’. In this configuration of power/knowledge, the possible future that seemed to be enacted had nothing to do with improving the case workers’ work situation or with supporting their work practices. Instead, an organizational perspective became dominant, in which it was important to cut costs and replace case officers with an automated information system. This possible future was gendered in another way, and indicated a situation in which the case officers at TIA would experience a much more uncertain work situation. Some might be offered early retirement, some might be reorganized, and some might become unemployed (cf., Sefyrin and Mörtberg 2009). This possible future was related to quite another view of what information systems in an organizational context are supposed to contribute, a view in which, instead of supporting human work practices, information systems embody a more technological, rationalist way of conducting certain organizational processes, a view in which an automated system can replace human case workers. This view of information systems is
quite the reverse of the Scandinavian view of and approach to information systems, and something that this approach has in fact argued against (Greenbaum and Kyng 1991; Bjerknes and Bratteteig 1994; Ehn and Badham 2002; Bratteteig 2004).

Hence, the analysis illustrates how, in IS design projects, different possible realities are being enacted, and how these sometimes shift during the course of one single project. These realities are inevitably gendered, albeit in different ways, since they make it easier for some ways of acting, being and living, while at the same time contributing to making it harder for others (Löwgren and Stolterman 2007; Åsberg and Lykke 2010; Wajcman 2009; Scott and Orlikowski 2014), consequences that affect gendered bodies in different ways (Åsberg and Lykke 2010; Wajcman 2009).

7 Discussion

The aim of this paper was to explore how power/knowledge plays out in the everyday practices of an information systems design project, and how this is also a gendered issue. The analysis illustrated three different configurations of power/knowledge during the course of the business analysis as a result of shifting design conditions (Markussen 1996). Even though the analysis contains no key, no story of what happened after the design project, the project nevertheless clearly worked towards the enactment of some specific, and differently gendered, futures, which shifted with the different configurations of power/knowledge. There are three concluding points which the analysis illustrated, and which are worth reiterating here:

First, the analysis exemplifies how Foucault’s (1980) concept of power/knowledge might work at the level of micropractices in an information systems design project. The described configurations of power/knowledge contributed to the distribution and hierarchies of knowledge, expertise and participation in information systems design. Exploring the design conditions that contributed to configurations of power/knowledge in IS design projects might assist in answering questions posed by feminist researchers about how to challenge dominant views of relevant expertise (Karasti 2003), and of what counts as a legitimate argument in design (Markussen 1996), as well as questions about whose knowledge becomes materialized in design processes, and who is recognized as an expert and knower in these processes (Elovaara et al. 2006; Wajcman 2009).

Second, the analysis exemplifies how these design conditions, and the ensuing configurations of power/knowledge, contributed to the enactment of gendered realities. Even though in this paper there is no key as to which gendered realities resulted from the IS design project, the configurations of power/knowledge that were distinguished clearly contributed to the enactment of at least two possible, and differently gendered,
realities. The first of these configurations contributed to the enactment of a better work situation, by means of an improved information system, for the case officers employed at TIA. The second indicated a shift in this, and the third configuration made it clear that the project was now aiming at a quite different possible future than previously, that of an automated information system, which would render many of the case workers currently employed at TIA redundant: some would be offered early retirement, while others would be reorganized, and yet others risked unemployment (Sefyrin and Mörtberg 2009). Both of these possible realities were clearly gendered, since they would affect gendered bodies in different ways, the first prioritizing a largely female group of case workers, the second instead down-prioritizing this group. This argument relates Foucault’s (1980) power/knowledge to the discussion among feminist technoscience scholars about how technoscience practices such as IS design contribute to gendered realities (Löwgren and Stolterman 2007; Åsberg and Lykke 2010; Wajcman 2009; Scott and Orlikowski 2014).

Third, the analysis provides an example of how, in IS design projects, and as a result of different design conditions and the related configurations of power/knowledge, different possible realities are being enacted, how some possible realities are being explored (on the verge of becoming real), dismissed (becoming less real), and replaced by others (which thus become more real). This argument has been made by scholars in science and technology studies, feminists and others (Latour 1987; Mol 2002; Law 2004; Wajcman 2009; Åsberg and Lykke 2010). The example provided here illustrates how this might create hope for a better future among some of the affected bodies, such as the case workers in focus here, but if these realities become replaced within the same IS design project, these hopes might also be turned down, and instead other bodies and values will become prioritized.

The study suggests the importance of exploring how humans are entangled with—become with (Haraway 2016)—a number of material, social, economic, political and technological practices, how power works through these, and how this plays out in technoscience practices such as the design and use of information systems (Åsberg and Lykke 2010). There are different terms for the entanglement of the human with the material and the social, or the meaningful, used by different writers and in different research fields. Hence, the term sociomateriality in the IS field (Cecez-Kecmanovic et al. 2014) builds on conceptual roots from other scholars, such as Haraway’s material-semiotic (1991), Barad’s material-discursive (2003), Law’s hinterlands (2004), and Suchman’s sociomaterial (2007). In this paper, Foucault’s concept of power/knowledge was used as a primary analytical lens (1980), with the support of insights from feminist technoscience scholars. These suggestions are also in line with the arguments of
scholars in feminist technoscience (e.g., Wajcman 2009), who argue that the analytical lens in research should be widened to include not only the technological artefact, but the technological ensemble, and even the technological culture (see also Bijker 2010). A related argument about the IS field is made by Walsham (2012), who suggests that IS research should move away from the traditional organizational focus to also include more general issues of how information and communication technologies might contribute to a better world.

Notes
1. This argument can also be found in IS research, although without the focus on gender (e.g., Orlikowski and Robey 1991).

Acknowledgments
This paper would not exist without The Insurance Authority, the project participants and the helpful people who worked there, nor without my supervisors at the time of the study—Christina Mörtberg and Katarina L. Gidlund—thank you all! I also want to express my gratitude to the reviewers and the editor of Scandinavian Journal of Information Systems—thank you for your detailed readings and helpful comments, and for your patience with the text.

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