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Digital transformation and power relations. Interpretative repertoires of digitalization in the Swedish steel industry

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ABSTRACT

This study focuses on how ideas of ‘digitalization’ are discursively constructed in the Swedish steel industry. Using a discursive psychology approach, we identify seven interpretative repertoires in the discursive practicing of digitalization: everyone-else, speed, competition, job loss, control, safety, and equality. Examining their functions and effects, we show that not only is digital transformation constructed as more productive, efficient, competitive, technologically advanced, safe, and equal, it also involves a shift towards the blue-collar worker being more vulnerable; a construction where she is able-minded but lonely, physically fragile, obtuse and unreliable, and a victim of a development beyond her control, forcing of her to acquire new competence. We conclude that this reproduces asymmetrical power relations between workers and companies, pushing the challenges of digital transformation to the workers. At the same time, we also see how these local discourses hold a possibility of tempering this asymmetry through the construct of togetherness of different contexts, bodies, and hierarchal levels, thus connecting steel industry workers of the future through the use of digital technology.

1. Introduction

Originally referring to the transfer of information to digitally accessible formats, the concept of “digitalization” has come to denote the implementation of all sorts of digital technologies and web-based services providing the possibility of storing, transferring and sharing large amounts of data, as well as of assisting, replacing or collaborating with humans at work (Caesarius & Hohenthal, 2018; Corrocher & Ordanini, 2002; Kaivo-Oja et al., 2017; Kallinikos, 1992; Kuusisto, 2017). With these features, digitalization is believed to hold great transformative potential, leading to processes commonly called “digital transformation”.

Through digital transformation, existing business are transformed (Dean et al., 2012; Kim et al., 2004) and new business models are enabled (eg Anastasiadis et al., 2018; Rothmann & Koch, 2014), causing changes in consumer behavior (Basuki Joewono et al., 2019) and leading to the blurring of boundaries between producers and consumers (Bauer & Gegenhuber, 2015). Hence, it is claimed that digital transformation is changing organizational phenomena such as strategizing (Hydle, 2015); decision making (Matzler et al., 2018; Petter et al., 2008;

Wixom, 2001); knowledge creation (Baralou & Tsoukas, 2015); conditions for learning (Ling Tay & Wee Kiat Low, 2017); transparency (Krause Hansen & Flyverbom, 2015); interorganizational trust (Kasper-Fuehrer & Ashkanasy, 2001); work practices (Pritchard & Symon, 2014; Sewell & Taskin, 2015); leadership (Bolden & O’Reagan, 2016); power and managerial control in organizations (Coombs et al., 1992; Thorén et al., 2018); and organizational structures, such as bureaucracy (Kornberger et al., 2017).

Generally, the transformative power of digital transformation is thought to stem from the disruptive potential of technology to cut across firms, industries and societies (Kilkki et al., 2018), leading to improved business operations and organizational processes (Åkesson et al., 2018; Mergel et al., 2019; Schwarzmüller et al., 2018), and this development is often depicted as leading to a significant transformation of social and organizational life; unprecedented in terms of speed, range and impact (Blackburn et al., 2017; Corrocher & Ordanini, 2002; Davidsson et al., 2016; Ferràs-Hernández, 2018; Matzler et al., 2018; Risius & Spohrer, 2017; Sjödin et al., 2018).

Although dispersed across several subject fields and scientific traditions, the research on digital transformation is largely performed in an

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empiricist tradition (cf Hjørland, 2005); a tradition that has been questioned on the grounds that it does not acknowledge a variety of dimensions that may also help explain the emergence and effects of digital transformation, for example, context and situatedness (eg Blagoev et al., 2018; Fox, 2014; Jonsson et al., 2018; Just, 2019; Mutch, 2013; Panourgias et al., 2014; Wikgren, 2005).

It has also been argued that the transformative potential of digitalization may be understood not merely as a result of technology itself, but as a result of discourse, as discourse is a powerful source of change, by creating, sustaining and transforming our basic assumptions (Barrett et al., 1995; Hardy et al., 2000). From this perspective, to understand how digital transformation comes about, we need to understand how it is discursively constructed through discourses on digitalization.

Previous research has investigated digitalization as operations of power, as digital control (Ettlinger, 2016; Ford & Graham, 2016), and as highly normative on a societal and organizational level (Jemine et al., 2019; Schou & Hjelholt, 2019; Schou & Hjelholt, 2018). Furthermore, it has been argued that the discourse on digitalization is potent in restructuring power relations, which has led to a call for further analysis of how digital transformation shifts power relations (Johansson et al., 2017; Pablo & Hardy, 2009; Rahm & Fejes, 2017). Therefore, the purpose with this study is to develop the understanding of how digital transformation is discursively constructed. Based on this, we will be able to discuss the complexities and contradictions in the /re/production of power relations in the steel industry, and how discourse may be used in an emancipatory way, aiming to social change (Edley, 2001).

The empirical setting is the Swedish steel industry, an industry that since the last millenium has experienced processes of digitalization, and where digital transformation has become even more relevant through the emergence of "Industry 4.0", i.e. the adoption of advanced operation- and information technologies with the purpose of increasing efficiency and productivity (Autor et al., 2003; Xu et al., 2018). By automating highly routinized work and connecting digital systems (Autor et al., 2003), "smart factories" are created where quality is improved by the minimizing of human labor and thereby human error. This is not the first time the steel industry is undergoing extensive change. Throughout history it has been exposed to global industrial change which has been internalized into the collective memory of steel industry workers (MacKenzie et al., 2006; McLachlan et al., 2019), recasting power relations – but more research is needed (Johansson et al., 2020).

Turning to discursive psychology we here analyze how current ideas of 'digitalization' are constructed in interpretative repertoires across five Swedish steel companies. This means that rather than focusing on capital "D" Discourses (cf Alvesson & Kärreman, 2000) on a societal level – a common approach in contemporary research on digitalization (Fuchs, 2020) – we focus on language-use in the organizational contexts of these companies. Developing an understanding of which and how interpretative repertoires are used when talking about 'digitalization' in organizations enables us to unpack how digital transformation is discursively constructed, since interpretative repertoires as locally constructed ways of talking about a particular phenomenon (Wetherell & Potter, 1992) as performative discursive constructs (Nordgren, 2010; Tsoukas, 2005). In an era when digital transformation is depicted as a panacea to all sorts of contemporary and future challenges, the scrutinizing of the taken-for-grantedness of digitalization seems all the more important.

2. Understanding digital transformation as a discursively constructed – and its implications on the steel industry worker

Most contemporary research on digitalization discourses has painted a grand, but dystopian, picture of digital transformation on a societal level, where humans become marionettes in the strings of digital development. Digitalization has for example been explained as authorities of knowledge (Ford & Graham, 2016), involving an all-encompassing, highly normative reproduction of neoliberal political

ideas (Schou & Hjelholt, 2018). It has also been argued that digitalization is discursively constructed as an unstoppable process, built into the idea of marketization (Henriksson et al., 2019); that it is an unproblematic management fashion (Jemine et al., 2019); a new regime of practices of institutionalized surveillance (Zuboff, 2015); and that it exercises control by being closely linked to new ways of organizing work (Ettlinger, 2016).

Previous research has further emphasized that contemporary discourse constructs digitalization in a non-ideological and post-political way, which is problematic since all phenomena may be seen as ideological and political, and since non-ideological/non-political constructions may hide power imbalances (Rahm & Fejes, 2017). This has led to a call for further (discourse) analyses on the invisible power, power shifts, and embedded discursive conflicts in processes of digital transformation (Johansson et al., 2017). The discourse of digitalization as hegemonic and producing new social orders implies that digital transformation recasts ideas of expertise and occupational agency (Vivitsou, 2019). Further studies are however needed to explore social conflicts, difficulties and shifting power relations in the transformation of society through digitalization (Henriksson et al., 2019).

In the context of the steel industry, it has been argued that past and contemporary experiences of downsizing, redundancy and workplace change for long has been a central plot (McLachlan et al., 2019), which moulds steel workers' room for agency. It has also been argued that the consequences of technological advances has not been studied enough, especially when it comes to organizational and human implications (Shenkar, 1988). In fact, with a few exceptions (cf Fuchs, 2020; McLachlan et al., 2019), contemporary research on digitalization has rarely been interested in the steel industry; not even in industrial manufacturing. Instead, the vast majority of research has evolved around low-hierarchy self-organizing enterprises (Lemmetty & Collin, 2020), precarious workers (Vallas & Christin, 2018), the 'cybertariat' (Ettlinger, 2016), and micro-scale forms of working (Lange & Bürkner, 2018).

Furthermore, in most of the research accounted for above, digitalization has been studied through a Foucauldian lens (Fuchs, 2020), a theoretical perspective that comes with a concern for the operating of power on humans, thus viewing individuals as governed and determined by technology that imbues social structure (cf Foucault, 1982; Foucault et al., 2008). Discourse analysis however provides alternative perspectives. On the other side of the boundary line (Wetherell, 1998), or the d/D-split (Alvesson & Kärreman, 2000), is discursive psychology, a discourse tradition that treats language as a flexible resource for human agency that is particularly useful when nuancing the understanding of multi-faceted phenomena (Wetherell & Potter, 1988). In particular, this angle provides good opportunities for understanding the emancipatory uses of discourse (Edley, 2001) by opening up for the distribution of agency and the idea that discursive constructs are flexible (Lemmetty & Collin, 2020). In sum, the discursive psychology tradition acknowledges the important role of variability in discourses-in-use, which may be of particular interest when it comes to studying digitalization since this phenomena contains dilemmas as well as frictions (Golden & Geisler, 2007).

3. Conceptual framework: discursive psychology and interpretative repertoires

Within the framework of discursive psychology, the concept of interpretative repertoires may be defined as locally produced discourses that involve an interest in what happens within a conversation and the relationship between the conversation and its context (Wetherell, 1998). By paying attention to how linguistic clusters, certain tropes or figures of speech – not necessarily always in the form of metaphors – are used and negotiated between individuals to convey content, meaning, and understandings of what is to be considered right, wrong, truth, fact or common sense in a certain context, interpretative repertoires may be

mapped (Edley, 2001; Wetherell & Potter, 1988, 1992).

An important starting point for this understanding of discourse is that language cannot be treated as something that exists in its own sense. Instead, local contexts are important and decisive for how interpretative repertoires will emerge and be used (Wetherell, 1998; Wetherell & Potter, 1992). Further, the power to control the use of discourse will involve the sustaining of particular ideological angles over alternative ones (Fairclough, 2001). In line with Ostendorp and Steyaert (2009) and building on Potter and Wetherell (1987), we thus derive our conceptual framework from the idea that the individuals' use of interpretative repertoires reveal "the political dimension of discursive sense making" (Ostendorp & Steyaert, 2009, p. 376). This means that we align with Höglund and Svärdesten (2018) in understanding interpretative repertoires as localized use of discourse that draws attention to power relationships in organizations.

To focus on interpretative repertoires has three implications. First, it means that interpretative repertoires are seen as reflecting taken-for-granted and commonplace assumptions around a phenomenon on an organizational level. Second, it means that several interpretative repertoires may be used simultaneously to explain a phenomenon, leading to the construction of different, or even contradicting, views (Potter & Wetherell, 1987; Seymour-Smith et al., 2002). And finally, it means that individuals' agency is acknowledged, since humans are understood to actively use interpretative repertoires in specific, local contexts (Potter & Wetherell, 1987; Wetherell & Potter, 1992). This means that the mapping of interpretative repertoires related to a particular phenomenon also sheds light on the performative possibilities of discourse in relation to the phenomenon expressed (Edley, 2001; Wetherell & Potter, 1988).

In sum, the analysis of interpretative repertoires enables the development of an understanding of how members in organizations make sense of a phenomenon by understanding these as constructed in the linguistic intersection between individual and society, but within an organizational context (Edley, 2001; Gilbert & Mulkay, 1984; Golden & Geisler, 2007; Huzzard, 2015; Potter & Wetherell, 1987; Wetherell & Potter, 1992). To focus on the interpretative repertoires, then, helps us unpack how a global idea such as digital transformation is linguistically reproduced and used in the context of organizations; something that enables as well as constrains practice and shifts power relations (Höglund & Svärdesten, 2018; Ostendorp & Steyaert, 2009).

4. Method

4.1. Empirical context and data collection

Our empirical study is situated in the local context of the Swedish steel industry; an industry that already at the beginning of the millennium started to digitalize operations, but that during the last decade has been heavily influenced by the idea of Industry 4.0 and the implementation of advanced operations technologies as well as new information technologies. In many companies this has led to job-polarization, as routinized labor has been replaced by automated technologies (Heyman, 2016). Although there are differences between different companies regarding the extent to which they are digitalized, the industry at large may however be described as traditional in the sense that the production units are an integral part of the local communities where they are geographically situated (Vaara, 2002).

Five steel companies operating internationally but with production units in Sweden were chosen for the study, in which an interdisciplinary group of ten researchers from business administration, engineering, education, sociology and psychology were involved during the course of a year. In order to catch potential variations in the discourse on digitalization, the companies were chosen so that they differed with regards to production processes, type of steel production, how far digitalization had come in automizing production, customer relation systems, ordering systems, and in equipping workers with digital tools such as mobile phones, e-mail and access to intranet.

Within the steel industry, blue collar workers, engineers and clerical staff share historical memories of organizational and technological change, blurring the boundaries of organizational memory, as different professions are all "bound by a community of fate" (McLachlan et al., 2019, p. 917). Therefore, interviews were performed with a wide group of respondents, holding various positions in the companies, for example operators, maintenance technicians, managers on various levels, team leaders, technicians, HR professionals, and on-site union representatives. A majority of the respondents were men, reflecting the gender structure of the companies and in the industry at large. Ages ranged from 27 to 65, as did the number of years of experience – 5–45 years – and skills and experiences were also varying. In total 89 interviews were performed.

Five members of the research group were responsible for performing the interviews. The interviewers followed a semi-structured template that the group had agreed upon beforehand and that covered various aspects of the overall theme of digitalization and its consequences for work, culture, organizing and management/leadership, but with a special focus on the consequences for operative, blue-collar work. In performing the interviews, we aimed for sensitivity to local specificities and individual nuances by keeping the interviews as open as possible. The interviews took 10–130 min each and were all recorded and subsequently transcribed. In addition, we collected documents of various kinds, and for several days at each company we observed work and wrote field notes. All empirical material was shared with everyone in the research team through a common digital repository. Workshops were organised in which we shared our impressions of the interviews and our reading of the empirical material, leading to a joint in depth-knowledge of the companies and the context of the Swedish steel industry (Clerke & Hopwood, 2014; Erickson & Stull, 1998). For this article, we have used the interview transcripts and the annual reports from the companies studied.

The annual reports are used as we also wanted to include material not only created by the researchers (cf Mueller & Whittle, 2011; Potter & Wetherell, 1987). Within discursive psychology, the use of naturally occurring data is recommended as a supplement or even as a /partial/ replacement for interviews (Potter, 1996). Furthermore, interpretative repertoires never emanate from one individual, but from the wider organizational and societal use of discourse (Potter & Wetherell, 1987) and the conceptual starting point for this theory is that utterances are acts bound by a broader discursive system. This, then, makes it possible to treat both annual reports and interviews as examples of 'talk' about the same phenomenon. The annual reports also helped contextualize the interpretative repertoires (cf Höglund & Svärdesten, 2018). Since two companies in the study belong to the same group of companies that issue a common yearly report, the total number of annual reports are four. For confidentiality reasons, the annual reports have been coded as "Company F-I" in order not to be identifiable in relation to Company A-E.

4.2. Analysis

When performing the analysis, the empirical materials (annual reports and interview transcripts) were treated as *texts*, addressing the same phenomena. As claimed by (Whittle & Mueller, 2011, p. 416) "interests and motives should be viewed as a topic for analysis rather than resource for explanation." Hence, we did not in this analysis make a distinction between the interview transcripts and the annual reports, but saw them as texts where people (whether operators, managers, or accountants) in the studied organizations expressed a particular stake in the digital transformation in relation to an audience (the interviewer or the reader of annual reports). This way of not distinguishing between types of texts builds on the framework of discursive psychology and the integration of language as talk as well as action (rather than assuming a dichotomy between rhetoric and reality), and keeps the focus of the analysis on how people use discourses to construct their versions of the world (Wiggins & Potter, 2008).

With roots in speech act theory, ethnomethodology and post-structuralist works, discursive psychology derives from the notion that language is performative, with intended as well as unintended consequences (Wetherell & Potter, 1988). Utterances are acts in local and broader discursive systems, and the use of discourse in language can be “seen as a *social practice* itself, as opposed to a neutral transmitter, with its own characteristic features and practical consequences” (ibid, p. 168, italic in original). As discourse and practice mutually constitutes each other (Jørgensen & Phillips, 2002) the implementation of digital technology is here to be understood as the relationship between practice and the meaning that is constructed by the use of discourse – unraveled in the close attention paid through “talk-about-practice” (Golden & Geisler, 2007, p. 531). This has implications for the way we treated the different empirical materials in our analysis; something that was performed through an iterative process in what, with hindsight, may be described to have taken place in three stages.

In the first phase, the authors of this paper read and re-read the material individually, focusing on linguistic clusters in the empirical material where “digitalization” or “digital transformation” were mentioned directly or indirectly by the respondents and in the reports. We paid particular attention to, and coded individually, how digitalization was linguistically constructed. At this stage, we aimed at being as inclusive as possible in order to catch both varieties and similarities in the material (Höglund & Svårdsten, 2018).

In the second stage, we discussed our codes with each other while returning to the empirical material. At this stage, we compiled a list of codes and discussed them separately and in relation to each other while jointly revisiting the empirical material. Through these discussions we agreed upon seven interpretative repertoires that we all saw were used repeatedly but with variations across the empirical material. Some codes were codes that all of us had come up with when coding individually. One example of this was ‘speed’; a construction we all had seen in the material, denoting the need to be active; of technology setting the pace; and the idea that the present development of digital transformation goes fast compared to the past. Some codes were codes that we, through discussion, decided to merge with other codes. An example of this was the code of ‘competition’ in which we decided to use the code of ‘survival’ that one of us suggested, as we saw in the material that the idea of ‘competition’ was closely related to the need to adjust in order to survive or be overtaken by other companies. Similarly the code “everybody-onboard” suggested by one of us, was dropped as denoting an overall interpretative repertoire and instead included in “safety”. In our discussions we found that our different academic backgrounds enriched and helped nuance our joint understanding of these discursive constructions.

In line with Potter and Wetherell (1987), Wetherell and Potter (1988), we took, in the third step of analysis, turns in writing and re-writing the results-section, paying particular attention to variation, tensions and contradictions in the empirical material, thereby finding yet more nuanced ways of expressing the interpretative repertoires. Inspired by Ostendorp and Steyaert (2009), we decided to describe the interpretative repertoires in terms of functions and effects (see the Table 1 below). The concepts of *functions* and *effects* stem from Potter and Wetherell (1987, p. 168), building on the influential work of Mulkay and Gilbert (see for instance Gilbert & Mulkay, 1984). These concepts relate to the idea that the way people argue fulfils different functions in a conversation, and that these functions render consequences for present, mentioned or implied people involved in the conversation.

For the sake of highlighting the multilingual nature of our scholarship (Steyaert & Janssens, 2012) we would also like to point out that although this text is written in English, the empirical work, including the analysis, was performed in Swedish. The interviews were all performed in Swedish and most of the annual reports were available in Swedish. This means that for the sake of this paper, we have translated all Swedish quotes into English, and as will be seen below, we only use one quote from an annual report that was available in English (see footnote).

Table 1
Overview of the interpretative repertoires.

	The Everyone else repertoire	The Speed repertoire	The Competition repertoire	The Control repertoire	The Job loss repertoire	The Safety repertoire	The Equality repertoire
FUNCTIONS							
Main terms	Everyone else, everywhere, other companies, society	Fast/faster, more, quickly, cope	Risk, competitiveness, competitive advantage, forefront, race, death	Automatically, accuracy, numbers, information, control	Fewer people, alone, robots	Work-related risks, heavy jobs, ergonomics, rehab, heavy lifts, robots	Blurred borders, similar jobs, hands, screens, competence
Focus on	Doing what everybody else does	Keeping up with (technological) development	Staying competitive	Reducing human control; transferring knowledge from humans to machines	Automizing production	Improving work-conditions	Making working life more equal
Aim	Not be different	Not fall behind	Survive as a business	Increase productivity and increase quality	Improve production, reduce costs	Reduce work hazards	Less differences between (white- and blue-collar) workers
EFFECTS							
Digital transformation	A threat – but an important trend	Unstoppable and insusceptible to human influence	A necessity	A business matter	Inevitable and unfortunate	A possibility	Including for some and excluding for others
New construct of the company	Technologically Advanced	Efficient	Competitive and optimized	Productive	Cost-efficient and stable	Safe workplace	Equal workplace
New construct of the worker	The Victim	The Obtuse	The Unskilled	The Unreliable	The Superfluous and Lonely	The Fragile	The Able-Minded

5. Interpretative repertoires constructing digitalization

In the following we will describe the seven interpretative repertoires identified in the empirical material: the repertoires of everyone else, speed, competition, job loss, control, safety, and equality. Together they not only bring to the fore how digitalization is made sense of in the context of the Swedish steel industry, but also help unpack how ideas of 'digitalization' are discursively practiced in Swedish steel companies, thus how digital transformation is constructed. This has, as we shall see, effects not only on the companies, but on the workers, who are constructed differently in relation to the different repertoires. The table outlines this in terms of the *functions* of the different repertoires (their main terms, focus and aims) and their *effects* (regarding how digital transformation is discursively constructed, the new construction of the company and the new construction of the worker).

5.1. Repertoire of everyone else: the technologically advanced company/ the victim worker

In the repertoire of everyone else the main argument for digitalizing is that everyone else – in society as well as in other organizations – is digitalizing. The focus of digitalization is, according to this repertoire, to become similar to everyone else by doing what everybody else is doing – the aim is to not be different. Although the repertoire constructs digitalization as a necessity, it is unclear what the benefits for the individual are. 'Digitalization' is something of a corporate buzzword, or fashion statement (Jemine et al., 2019), demanding the introduction of new digital tools regardless if they are needed or not. The repertoire of everyone else thus contains an element of not knowing *why* digitalization is important, but of having to go along with it anyway, because everybody else is doing so:

They always say that 'Now we're doing this because it's more modern, more right. New paths. This is how everyone else does it'. Yes, but is that what we want? Is that what we need? Sometimes we may not need a new web mail or something at all, we'd rather have the old system updated.
Company B Int 1, Operator/shift manager

As seen here, the updating of old systems and the involvement of the workers in the decision making related to digital technologies are two courses of actions that are constructed as not being part of the work of digitalizing in this repertoire. At the same time, the shift manager expresses resistance by addressing old ways as proven and sustainable.

Several Others are constructed in this repertoire – from the rather anonymous and ubiquitous 'everyone', to the more specific 'clients' who "put new demands" on the company (Company G, Annual report): to specific competitors and other industrial organizations (e.g. "Boeing and other companies have [been digital] for a long time.", Company C, Int 12, Technology manager). Regardless of who "everyone else" are, the underlying argument for why we are digitalizing is that *everyone else* are. In fact, this repertoire constructs digitalization as a larger societal trend: "... everything is (digital) data now. Really. You don't do anything without it, I think. You do your tax declaration, pay your bills..." (Company E, Int 5, Operator). The way digitalization is constructed means that digital transformation is implied to be compulsory, helpful and necessary for the worker, not only in her professional capacity, but in her private life.

Digitalization however also constructs digital transformation as a threat to the workers since they will be replaced with technology: "... in many places humans disappear and a robot comes in" (Company E, Int 22, Union representative). The repertoire expresses a dismal stance towards this development: "I don't think people are afraid, it's more that they've got used to everything that changes at home with technology and that." (Company D, Int 2, Technology coordinator). The argument that digital technologies have become ubiquitous thus seems to be a way to deal with the threat that digital transformation brings.

The consequence of how the repertoire of everyone else constructs

digitalization is that the company, by engaging in a process of digital transformation is constructed at the forefront of technical development and as technologically advanced – just as everyone else – but that the worker is constructed as a victim of this trendy, and potentially threatening, development in which she has little agency; a development where her voice is not heard and where her opinions do not matter. Resistance is expressed by building on sediments of the old ways as proven good and possibly sustainable.

5.2. Repertoire of speed: the efficient company/ the obtuse worker

The main terms used in the repertoire of speed are words like "fast", or "faster", "more" and "quickly" and the argument for digitalizing in this repertoire is concerned with keeping up and not falling behind as digital technologies develop at an increasing speed. The repertoire of speed also contains an element of 'more' technology, as well as a notion that this development is fairly recent: "there is just more and more technology nowadays. Things have been standing still for a hundred years, but now it's just more and more." (Company A, Int 20, Union representative)

Later in the interview, the same union representative says that "The development goes faster than what we can cope with [...] There is no stop to it really; the wheel must spin faster and faster and faster. It's scary." (Company B, Int 20, Health and safety union representative). Here, the metaphor of the wheel that spins at an increasing pace expresses the anxiety that the force majeure of digitalization entails. As a consequence, digital transformation is unstoppable and insusceptible to human influence and the repertoire expresses anxiety, maybe even fear: "Things have moved a bit too quickly. That's what we're afraid of, that things have moved too quickly..." (Company B, Int 1, Operator/Shift manager).

In the repertoire of speed, manual labor and human craftsmanship are constructed as slow and therefore outdated. Hence, some groups, such as operators with craftsman-type skills, are constructed as being too slow:

Things are moving faster and faster and become more advanced and they aim at cutting costs all the time. [...] We have to realize that we won't be able to do things by hand anymore.
Company C, Int 12, Technology manager

Through the repertoire of speed, digitalization leads to digital transformation through notions of 'more' and 'faster', meaning that the company that undergoing digital transformation is constructed as being more efficient, whereas the worker is constructed as obtuse. In a world where productivity and efficiency are important, doing things by hand is no longer possible.

5.3. Repertoire of competition: the competitive and optimized company/ the unskilled worker

The discourse of the repertoire of competition focuses on staying competitive with the aim of surviving as a business. As with the repertoires of everyone else and of speed, the repertoire of competition constructs digitalization as something that cannot be avoided, but the reason for this perceived inevitability is the need to stay competitive, rather than doing like everyone else, or keeping up with technological development as a goal in itself. The repertoire of competition is constructed through stories of risks, such as in the Annual report of Company F: "There is a general risk of [the company] losing competitiveness and market position if we are not able to position ourselves digitally fast enough." Here we also see how this repertoire has an element of speed; measures to stay competitive needs to be taken rapidly.

This repertoire constructs digitalization as the means for providing competitive advantage by optimizing organizational processes. The Annual report of Company G for example states that: the company "will [...] take the lead when it comes to digitalizing operations." The vision is thus not just to compete, but to be number one among competitors; to

win the competition. The overall aim is not just to keep up with trends; this is a necessity, in order to stay in business: *“If we’re not at the forefront, someone else will be, and then we’re screwed.”* (Company B, Int 13, Production technician). A Technology manager (Company C, Int 12) compares digital transition with a race: *“Well, think about the driver of a race car; if a race car driver is reluctant to having electronics and things in his car... he’ll be overtaken by someone who has these things.”* To be overtaken is certainly not a positive development – so any resistance of accepting the development needs to be knocked down. To not participate in this race even implies death: *“The most important thing is, I mean, the companies that refuse to see the development, I think they are facing a slow death.”* (Company A, Int 3, CEO). Here, the CEO uses the very strong metaphor of death when speaking about the necessity to digitalize in order for the company to survive as a business.

As the above excerpts reveal, the repertoire of competition constructs digital transformation as a necessity. This is not only because digitalization will bring advantages in terms of output (productivity and efficiency) but also in terms of input (recruitment). Recruitment of the ‘right’ competence is described as crucial, and companies will be competing about attracting future workers with adequate competences:

We are facing challenges with new demands from the market, for example in digital competence. Attracting the right skills is crucial, [...]. The result is significant savings and recruitment of difficult-to-access skills.

Company F, Annual report

The current worker in this repertoire is however in the excerpt above constructed as unskilled by lacking digital competencies.

In summary, the repertoire of competition is constructed through metaphors of fight or race, which implies either winning or losing with nothing in between; even death if not participating. The effect of how this repertoire constructs digitalization is that the digitalized company stays competitive and survives as a business, but at the same time, this repertoire constructs the current worker as unskilled and as lacking the right competences.

5.4. Repertoire of control: the Productive company/ the Unreliable worker

In the repertoire of control digitalization is talked about in terms of accuracy, reliability, stability and minimizing risk. Digitalizing is about automizing production by reducing human involvement in operations and hence about transferring knowledge from humans to the more careful and reliable digital operators with the result of increased control. The aim with digitalization is in this repertoire expressed as increasing productivity and improving quality by relying on the controlling features of digital technology.

Through digitalization, the company, management or the operator will gain control over production, processes, information or humans, and this is constructed as bringing stability and control in terms of, for instance, manufacturing processes and financial results:

I see ahead that when we can control the operations [...] not just centrally, but locally, then things will be done automatically.

Company D, Int 3, Maintenance manager

This repertoire further contains the construction of digitalization as related to risk management, that is, the work done to control risk. Disruptions in IT systems, IT dependency and cyber security risks are examples of risks where digitalization is brought forward and where becoming digital is hence also constructed as a way of *losing* control. These risks are, however, in the annual reports complemented with mitigation plans communicating that the situation is under control:

...cyber threats and other security threats could exploit possible weaknesses in [Company H’s] security controls, which in turn could cause leaks of sensitive information, theft of intellectual property, production

outages, or damage to [Company H’s] reputation. [Company H] is taking necessary steps to ensure that the IT systems and solutions are reliable... Company H, Annual report¹

In the repertoire of control, digital technologies are however constructed as more careful and more reliable than humans, indicating that with the introduction of digital technologies the importance of the human worker will be reduced:

Today we’ve got staff who [...] truck drivers who fetch paper. This will change, the accuracy in [digital] equipment has increased so in the future we’ll be able to reduce the number of control-actions that people perform.

Company A, Int 3, CEO

As the quote above illustrates, the repertoire of control involves the idea of reducing humans as responsible for controlling and verifying the digital leaving the future human worker somewhat idle in this repertoire. The digital transformation thus becomes a business matter with the unreliable human worker left behind or outside.

This repertoire, however, also contains traces of resistance. Control requires the production and analysis of more data, but this is a time-consuming process and the data may not even reflect “reality”:

The advantage could be that management gets diagrams and numbers, but at the same time the need for control also increases. They look at how the numbers increase or decrease, how the production goes up and down, but from an average. The managers want the numbers to even out; they want a straight line all the time. But that’s not how it works in reality. Theory and practice...

Company B, Int 20, Health and safety union representative

In summary, even if digitalization is described as risky and costly, the repertoire of control constructs the digitalized company as being able to engage in cheaper manufacturing and improved processes. This is a company where production processes are marked by accuracy, increased quality, stability and minimal risk: and where digitalization has enabled the organization to gain control of operations, output, waste and workers. Digital transformation is however a business matter with little human involvement, which is promising, considering the unreliable (human) worker constructed in this repertoire. Within the repertoire this is, however, to some extent resisted on the grounds that it is unrealistic.

5.5. Repertoire of Job loss: the Cost-efficient and Stable company /the Superfluous and Lonely worker

The repertoire of job loss is constructed as holding the idea that digitalization has (in the past) and will (in the future) decrease the demand for manual labor and is built upon the notions of fewer people and more robots. The focus of this repertoire is on automizing and, in particular, the automizing the operations of production and manufacturing with the aim of improving production and reducing costs. This repertoire thus holds the construct that humans will be replaced by robots, and several quotes include references to numbers or statistics supporting this idea. The reduction of the human work force is constructed as a driver of digitalization, with digitalization being constructed as the technologies that are superior to the human workforce and the digital transformation integral to these technologies being inevitable and unfortunate (for the human). There seems to be no escape from job loss as a consequence of digitalization: *“You want fewer people, that’s why you [digitalize]”* (Company C, Int 3, Operator).

And even if technology has replaced humans with machines in the past, the future is constructed as even more pessimistic in this regard:

¹ English original language

Interviewer: If you think ahead, 5–10 years, what do you think it'll look like [here] then? Are there any differences?

Respondent: Yes, I think so. Unfortunately, I think there are more robots and not a lot of staff. I think so. Unfortunately.

Interviewer: You say "unfortunately"...?

Respondent: Yeah... it's a shame.

Interviewer: Why do you say "unfortunately"?

Respondent: Well, we need the jobs.

Company A, Int 20, Union rep

Most quotes holding the repertoire of job loss contain a pessimistic view of the future, where jobs for humans are replaced by computer programs, AI and robots. And even if the quotes hold positive consequences for humans, the human is still constructed as having an uncertain position on the labor market:

If you can [...] automatize something that is dangerous for a human being, that's great. But at the same time, you should know that what you take away... if you put a machine there instead of a human being you take away a human being, what's he supposed to work with then?

Company D, Int 11, Technology coordinator

In addition, the repertoire not only constructs humans as possibly redundant, but also as potentially lonely, in the digitalized company:

More and more one-person-work. It feels like. I remember when my grandfather took in hay. Half the village was there – 15 people. Now you sit alone in the field and do this job. This is where it's going.

Company E, Int 5, Operator

In summary, in the repertoire of job loss, the company is constructed to inevitably becoming more cost-efficient, but as a place where the human worker has potentially become redundant since digital technologies are constructed as superior to humans. Another consequence of the digital transformation is that the current and future industry worker is facing loneliness in the workplace as colleagues are being replaced by (digital) technology.

5.6. Repertoire of safety: the Safe work-place/ the Fragile worker

The focus of the repertoire of safety is on improving work conditions for the (human) worker in order to reduce physical or psychological work hazards. This repertoire is built upon a discourse containing phrases like risks, heavy jobs, ergonomics and robots. Digitalization or digital technologies are constructed as that which take over heavy or in other ways (for humans) risky tasks. It also constructs digital transformation as leading to a better, safer, and more secure working life:

when I started, we were probably more than four times as many [workers] as we are now. Fewer jobs are generated now. But the jobs are safer. [...] The work-related risks are fewer, a lot fewer.

Company B, Int 4, Operator

As exemplified in this and the following quote, the repertoire of safety is related to the repertoire of job loss. As some jobs or professions change due to digitalization, safety is used to motivate and legitimize job loss:

The heaviest jobs and the worst jobs from an ergonomic perspective – robots do them now.

Company E, Int 1, Flow manager

Heavy work is disappearing since robots are taking over work that entails heavy lifting or that in other ways is constructed as difficult or hazardous physical and/or psychological work. However, a pattern in the material is to describe a present as well as a future where there is possibility for a better, safer and cleaner work environment as in the annual report of Company F: “[automization] makes operations safer since operators don't have to spend time in areas with high levels of heat, vibration,

noise and pollution.”. The digital transformation is in the repertoire of safety constructed as a possibility, particularly in relation to the human worker and her body. The humans can work in a safer, cleaner and less noisy environment, and with less stress on their bodies than in the past:

The workers had to do rehab-training because their shoulders and arms hurt, so that's why the robot came.

Company C, Int 6, Operator

As is shown in the quote above, in using this repertoire, the robot is constructed as an active participant in relation to the human. A similar formation is made in the following quote, where the robot is constructed as a caretaker of work and humans:

We do lift a few small things, but it's much better [...] Yeah, we used to lift more and more often. From [machine X] to [machine Y]. As it is now, the robots take care of everything.

Company B, Int 9, Operator

Thus, in the repertoire of safety, the robots are constructed as superior to humans due to the fragility of the human body. Some operators describe that even if heavy lifting is disappearing, many work chores are still repetitive and thereby the body is still being affected.

The improved work conditions that are in focus in the construction of the repertoire of safety are besides the body also a matter of space and time. The possibilities of the digital transformation include allowing the human worker to be less bound in space to her physical workplace and hence away from the potentially dangerous work environment of the shop floor. When robots perform the heavy labor, the operator can take breaks when needed instead of following the flow on the assembly line. Administrators can take their laptops home and combine work and private life, and this is even described as a potential future for operators:

We do it with a computer now, and that was not what we expected a couple of years ago... so maybe the next thing is to do things from a smart phone. That would be interesting; everyone sits and produces steel products from home.

Company C, Int 4, Operator

In summary, the repertoire of safety constructs digital transformation as a promise and a possibility, revolving around the image of a future factory where humans are safer and less bound to certain spaces within the factory. The digitalized company is a safer work-place, where there are less dangers for the fragile human body and where robots have taken over hazardous tasks.

5.7. Repertoire of equality: the Equal company/ the Able-minded worker

The repertoire of equality is built on the discourse of a digitalized work life as more equal than the non-digital work life, although not always for everyone. Digitalization is constructed as requiring more intellectual and, in addition, broader competence from the worker whereas digital transformation is ambiguous in its construction as including for some workers but not for others. The focus in this repertoire lies within the idea of digitalization making working life more equal and is built upon terms such as similar jobs, competence, hands and blurred hierarchal borders. This repertoire is similar to the repertoire of safety in how it constructs working life as becoming better but holds more talk of organizational hierarchical and educational levels than the safety repertoire. In addition, more equal salaries and professions are part of this repertoire, as expressed by an operator at Company C (Int 6): “My boss had talked to someone who said that [the operator's job] is similar to the job of an engineer”.

In this repertoire, borders between professions and educational levels are blurred, leading to more equality, as are hierarchies between white- and blue-collar workers:

The borders between white- and blue-collar workers have been blurred. [...] We used to say that a blue-collar worker was someone that worked with his hands, at least 50 % of the time. While a white-collar worker sat in front of a screen and typed. But [addressing the researcher] you've seen this when you've walked around, there are very few that work with their hands now.

Company C, Int 13, HR director

The respondent implies that the reason why digitalization leads to a more equal workplace is that digitalization is expected to demand more analytical competence among all staff, including operators and support staff, which by extension might blur or erase the traditional distinction between operators and administrators. But the repertoire of equality can also be used in a similar way as the repertoire of job loss: when fewer humans are to share the work, all are required to have the same skills in order to accomplish every task on their shift:

You have to have a wider competence so that you can step in for others if it's necessary. [...] I think that's a success factor. I don't think there's any alternative really. Because we can't pay people to not work. [...]

Company A, Int 18, HR manager

The digital transformation is in the two previous quotes constructed as inclusive for those who are able-minded or have the ability and/or possibility to broaden their competences. In addition, digital transformation is constructed around equality not only in cognitive abilities but also in physical abilities since when hands or bodily strength is no longer required, the work will be equally accessible or including for both weak and strong bodies:

So, the old machine is rather heavy [physically] to work with, but with [digitalization] it'll be easier [...] There is no longer a need for you to be able to do 200 [kgs] in bench press [at the gym] to be able to work this machine.

Company A, Int 11, Operator

But the repertoire of equality also constructs new ways of inequality. In the digitalized company, some workers might lose their jobs and groups of former workers risk the fate of falling outside of the labor market, constructing inequality not only among those still employed, but alienation among those who are old, or too low-skilled, for the jobs that remain:

We had some people we called '1%-people'. [...] They emptied waste baskets and stuff. There is no place for them here anymore. Earlier [Company B] was a mirror of society, everyone was different. That has disappeared during the past 10 years.

Company B, Int 18, HR Business Partner

The quote implies that in the company that has been transformed by digitalization there is no room or acceptance for those not fitting the new norm for what a worker should look like, which is decided by the competences required in the new, digital work environment.

In summary, the repertoire of equality constructs digitalization as leading to a transformation where the company becomes a workplace more equal through the blurring of borders between groups – but only for those who fit the template of the able-minded, ambidextrous and multi-skilled worker.

6. Discussion

With a focus on discourses in use through the conceptual frame of interpretative repertoires (Potter & Wetherell, 1987; Wetherell, 1998), the purpose with this paper was to develop the understanding of how digital transformation is discursively constructed. Although the focus here was the language-in-use on a local level – the discursive construction of digital transformation in the Swedish steel industry – the interpretative repertoires identified are also discursively constructed

elsewhere. The repertoire of competition is for example constructed in articles and consultancy reports (Dean et al., 2012); the repertoire of speed is constructed in policies framing digitalization as an unstoppable process that demands individuals and organizations to adapt and transform (Henriksson et al., 2019); and the repertoire of equality is constructed through economic research on job polarization, claiming that routinized labor has been replaced by automated technologies (Heyman, 2016). The interpretative repertoire of control appeared more than 20 years ago, involving the claim that internet and computers change the conditions of the labor market (eg Wyld, 1998); and the repertoire of job loss is similar to the widely-spread discourse that digitalization leads to job loss (eg Frey & Osborne, 2013). That local repertoires are similar to discourses found elsewhere is not at all surprising since discursive templates always build on other discursive templates (Tietze et al., 2003). This, then, indicates that the asymmetric power relations between companies and workers that are reproduced in local language-in-use in the Swedish steel industry are linked to the capital “D” Discourses on digitalization on a societal level (Alvesson & Kärreman, 2000). Together, they make up a complex and partly contradictory set of power relations, but also form the basis of potential emancipation.

On the one hand, the interpretative repertoires may be seen to reproduce power relations between companies and workers in an asymmetrical way (Aroles et al., 2019), as the challenges following the digital transformation seem to be pushed to the workers through the way digitalization is discursively constructed. The interpretative repertoires construct technology in a techno-deterministic as well as in a techno-optimistic way; technology is constructed as a “techno-fix” as Huesemann and Huesemann (2011) would call it, whereby digitalization and the economic development of the companies and the improvements in production and other company operations are linked in a causal and positive way. This means that the local discourses present through the interpretative repertoires are inherently ideological in articulating a particular set of ideas that are organized and reproduced within the power-regulated units of the companies (Spilioti, 2016). The ideology of techno-determinism and “techno-over-optimism” (McKeown, 2018, p. 41) construct a bias to technology, whereby the workers are constructed as objects of a technological transformation through which some are excluded and through which those that are left need to take individual responsibility to keep up with the development by, for example, acquiring necessary skills and developing new competences. This way, digital transformation is discursively constructed in a way whereby neoliberal ideas of development is closely related to businesses, concerned with efficiency and productivity, and emphasizing individualization (Henriksson et al., 2019; Schou & Hjelholt, 2019; Schou & Hjelholt, 2018); ideas that in fact emerged simultaneously and in close relation to each other already from the 1950s and forward in several western societies (Plehwé, 2009).

On the other hand; to argue that this study only reconstructs stereotypical patterns of organizational, hierarchical power relations would be to miss the point. Dominant discourses that are used to understand a social phenomenon are powerful, as they construct the framework for what can be formulated, and limits what can be thought about the phenomenon (Seymour-Smith et al., 2002). These limitations are reconstructed in interviews and the annual reports, thus being discursively constructed as facts. But as interpretative repertoires may be understood as ongoing negotiations of societal and organizational transformation (Whittle et al., 2008) local language-use may not simply be understood as expressions of a repressive managerial or societal discourse – a “methodical and political form of control” – (Rahm & Fejes, 2017:33). Instead, they may also be seen as a discursive resource (cf Kuhn, 2006), holding the key to an emancipatory and inclusive development of digital transformation. The way digitalization is constructed and legitimized through interpretative repertoires thus also means that digital transformation may be discursively promoted in *different* ways (Jemine et al., 2019). Hence, we would argue that the interpretative

repertoires accounted for here also hold the possibilities of achieving digital transformation in a different way.

Through historic experiences of industrial change, the connection to local community and strong camaraderie among blue collar workers has been central in the steel industry narrative (MacKenzie et al., 2006; McLachlan et al., 2019). This makes the construct of the lonely blue collar steel worker in digital transformation even more important to understand, as it overthrows central assumptions of the occupation. This exposure of the steel industry worker of the future as a rare individual is repeatedly legitimized through the use of discourses in the interviews and is also subtly present in the annual reports. It is however also challenged, as the argument for identity constructions through the use of discourse always contains argument for alternative identity constructions (Berglund et al., 2016), which means that the repetition of a factual construct always contains the potential of resistance. Loneliness is negotiated, for example, through the repertoire of safety that holds the idea of working from the social context of the home as a previously unexplored work context in manufacturing industry. The use of digital technology as not being exclusive for work, but as an integrated part of everyday life is further laid out through the repertoire of every-one else. This ties in with also previously implied discursive understandings of work-life boundaries (Golden & Geisler, 2007) that throughout history has been important, especially in the context of the male dominated manufacturing industry, as industrial workplaces may be seen as key sites for the construction of working-class manliness (Baron, 2006). This way “transitioning home” can be used by the individual as either an intrusion of the private sphere, or as an extension of agency, and an individual choice through which working life transcends otherwise separate social spheres (Golden & Geisler, 2007, p. 537).

The interpretative repertoires make evident that the strict boundaries of the steel worker-camaraderie of the past is being challenged. This is for example made evident in the fact that the strong body that traditionally has been the main inclusion criteria into the steel worker occupation, is being challenged and resisted in contemporary digital transformation (Johansson et al., 2020). The repertoire of equality contains traces of this resistance in that it forms new criteria for inclusion and togetherness, as opposed to exclusion, barriers and loneliness, among steel workers of different bodies but with similar skills. This new *togetherness*, of different contexts and of different bodies, holds a potential for a new type of inclusion in the discursive practice of digital transformation. As digital tools and social media have a strong connecting imperative in contemporary society, organizations in the process of digitalization are bound by the discursive constructs of ‘webs’, ‘networks’, and ‘connectivity’ (Castells, 2000; Kolb, 2008; Pablo & Hardy, 2009). Organizations in digital transformation are bound by this understanding, that draws attention to control, but that also emphasizes how the subtle use of discursive resources is potent in the restructuring of power relations, as Web-based phenomena that connect humans through portable, digital tools are integrated in or even replaces traditional ways of organizing in industry.

Furthermore, the construction of the blurring of boundaries of skills and between blue and white collar workers contests the normative rhetoric that separates management from workers, creating an “us” and a “them” which is a traditional product of managers’ as well as workers’ discourse (Coupland et al., 2005). The promise of togetherness based on similar skills rather than on gender or body challenges the historical consequences of the tight collective brotherhood of steel workers, traditionally manifested in the use of (a victimized) “us” and a (culpable) “them” through the construction of a divide between management and workers (MacKenzie et al., 2006).

7. Concluding remark

Based on the study discussed here, we would argue for the need to take seriously the construction of threats as well as of possibilities, not only for companies but also for workers, as expressed in local discourses

on digitalization, in order to enable a tempering of development that may otherwise be the result of the neoliberal techno-determinism and techno-optimism that seem to be present in the local discourse of the Swedish steel industry. To support this, industry management needs to actively reframe the discourse of digital transformation in a way where workers, individually and as a connected togetherness, are included, and constructed as able, reliable, important and with agency.

Research could support such development by exploring the role of discursive practices in the discursive construction (cf Davies & Harré, 1990) and identity work of individuals (cf Brown & Toyoki, 2013; Essers & Benschop, 2007; Sveningsson & Alvesson, 2003) in relation to constructs of digitalization in various industries.

Acknowledging the way digital transformation is constructed discursively is important, not only in the steel industry, but more generally. If people identify with the discursive construction of themselves as victims; as obtuse, unskilled, unreliable, and superfluous; as lonely and fragile, in relation to digital transformation, they may develop resistance to the development. This may, in return, result in an unsustainable situation where power asymmetries between groups are furthered reinforced, and where individuals, depending on their access to knowledge about technology and strategy may construct their subjectivities differently. Instead, the emancipatory potential of togetherness, shared responsibility and connectedness through inclusion, skill and knowledge across hierarchies needs to be supported and further practiced, for the benefit of all.

Authorship contributions

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