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Louise Harder Fischer
IT University of Copenhagen, louf@itu.dk

Frederikke Grunnet
IT University of Copenhagen, frederikkegrunnet@live.dk

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EFFECTIVE LEADERSHIP APPROACHES IN SOCIO-TECHNICAL CHANGE

Research Paper

Louise Harder Fischer, IT-University of Copenhagen, Copenhagen, Denmark Louf@itu.dk

Frederikke Grunnet, IT-University of Copenhagen, Copenhagen, Denmark
frederikkegrunnet@live.dk

Abstract

This paper investigates 15 leaders' effective leadership approaches in five different companies in Denmark, during eight months of Covid-19 restrictions. Initially, a massive scaling of digital technology adoption took place, with leaders and members forced to work virtually from home (WFH). Categorized as a major and abrupt socio-technical change, we inquired into the experiences before, during and after lock-down, and discovered that member well-being and team productivity had prevailed. Drawing on critical realism, we took a grounded theory approach to explore the phenomenon of effective leadership in socio-technical change. After extensive coding, we abstracted an underlying pattern that explains how effective leaders apply situational leadership by continuously activating synergies between mechanisms of socialization, institutionalization, and individualization in their socio-technical work-systems. These findings can serve as an inspiration to researchers and managers that seek to find new ways of harmonizing social and technical structures during rapid digital transformation.

Keywords: Effective leadership approaches, socio-technical change, grounded theory, critical realism

1 Introduction

In the domain of Information Systems (IS), how to design and enable work-systems, in which members are both productive and thriving, has been a core focus of socio-technical change initiatives for decades (Mumford, 2006). Socio-technical change research usually focuses on how a group of individuals interact and adopt a new work-place technology. In continuation, socio-technical change interventions are commonly designed and facilitated as a continuous process of socialization, which over time, alters a groups' dynamic relationships and norms around a task supported by recent technology (Huy, 2001). The aim of a socio-technical change is to produce new levels of well-being and efficiency in work-systems (Sarker et al., 2019). In a more philosophical perspective, Ropohl (1999) describes these processes of change as technological institutionalization and technological socialization. Technological institutionalization is the process of generalizing new value and behaviour patterns to the entire work-system through the innovation of novel technology, while technological socialization is the process through which the work-system then channels and shapes the behaviour of individuals, and integrates them into a common culture (Ropohl, 1999; Fischer & Baskerville, 2020). Yet, several socio-technical informed researchers have pointed out the failure of delivering both well-being and efficiency during digital transformation. A one-sided focus on economic value and efficiency has, according to Mumford (2006), Pasmore et al., (2019), and Sarker et al. (2019), been at the expense of enabling balanced outcomes, in which human actors could respond and alter their behaviour in timely and sound ways. Pasmore et al. (2019) conclude despairingly that the development

of organizational change capabilities has been ignored, and that the social side is poorly trained to adopt and adapt to rapid digital change.

In the current pandemic and during the recent Danish lock-down periods between March and October 2020, we witnessed organizations respond to governmental orders of immediately moving office work (WFO) to online work from home (WFH). We assume that leadership played an essential role in easing the immediate transition from WFO to WFH and perceive it as an opportunity to inquire into the importance of effective leadership approaches in socio-technical change. We are especially interested in leadership practices, how and if they fostered both productivity and well-being in these by-nature socio-technical change settings.

Only a few studies relate leadership approaches with socio-technical change. Avolio et al. (2000) found that if succeeding in socio-technical change, leaders need to play a more proactive role in creating the social structures in the work-system to fully leverage the advanced technology and highlights that one of the main challenges is how to optimally integrate human and information technology systems in their organizations. Fischer and Baskerville (2020) found that leadership decisions around social structures can act as a releasing and stimulating factor in activating dynamics in work-systems to enable both well-being and productivity. Their study discovered that leadership's active support of malleable and mobile work-place technology increases individual autonomy to decide where and when to work, and concluded that a mechanism denoted as technological individualization, was activated in the work-system, giving members the opportunity to fit work and technology to their preferences and potentials for being productive.

To investigate effective leadership approaches in socio-technical change, we have designed an exploratory study using grounded theory to develop building blocks for new theory. We are inspired by Sarker et al. (2019), who calls for studies that can identify mechanisms that bring about synergistic integration of the social and technical structures. Through a critical realist perspective, we seek to abstract certain mechanisms that can make accounts of effective leadership practices which can induce outcomes of productivity and well-being. Consequently, the purpose of the paper is to abstract mechanisms from leadership approaches that effectively moved their teams from WFO to WFH. These insights can provide an avenue for how leaders in the future can participate actively and effectively in the social and technical restructuring of their work-systems, when responding to future crises or rapid digital transformation.

The research question serving as overarching guidance for the study is formulated as the following: How has leadership been enacted during the transition of WFO to WFH? And what are the abstracted mechanisms?

The remainder of the paper is organized into five parts. As we approach the research with a grounded theory approach, we first describe the background knowledge that comprise our preliminary understanding of the phenomenon of effective leadership approaches. Then we report on our methodological considerations, data-collection, and data-analysis in section three. The subsequent part presents the theory from our findings in section four, and then we turn to a discussion in section five, detailing the contribution to the domain of effective leadership of socio-technical change and the limitations to our study. The paper finishes with a conclusion in section six.

2 Background knowledge

Leadership as a field of research has a line of extensive history and body of knowledge outside the traditional domain of IS-research. As a start, we find the concept of leadership “contingency approaches” relevant, as effective leaders are those who are sensitive to the changing environment of the group and can adapt their own behaviour flexibly to the new requirements (Ayman & Hartman, 2004). Therefore, we adopt the definition of leadership as a context that involves the interaction between two or more people (Nicholson et al., 2007) and defined as the behavior of an individual when he/she is directing the activities of a group toward a shared goal; or as the performance of those

acts, which help the group achieve its preferred outcomes (Nicholson et al., 2007). Since the origin of “contingency approaches” in the 1960’s, two related approaches have prevailed according to Ayman and Hartman (2004). The contingency model of leadership effectiveness (Fiedler, 1978) focusses on a leader’s traits and its effect on team performance, whereas as the situational leadership theory (Hersey & Blanchard, 1969) focusses on the leader’s perceived behaviors, that takes the individual and environmental situation into account. The contingency model of leadership effectiveness concentrates on team performance and categorizes leaders into one of two groups: those who are task oriented and those who are relationship oriented. The model determines in which type of situation the leader will perform more effectively being either high-, medium-, or low-control situations. More specifically, the model predicts that those leaders who are more relationship oriented are more effective in medium situational control and that those who are more task oriented are more effective in high- and low control situations (Fiedler, 1978). Hersey and Blanchard (1969) identify four leadership behaviors: telling, selling, participating, and delegating. The theory predicts that the extent to which these behaviors are effective depends upon employee ability and employee willingness in the following way: when employees are able and willing, a leader should delegate; when willing but unable, a leader should sell i.e., decide on a course of action and “sell” it; when unwilling but able, the leader should engage in participative decision making; and when unwilling and unable, the leader should tell them what to do. In continuation, situational leadership is recognized as the interlink between ‘task orientated behavior’ i.e., giving instruction, direction, and guidance; and ‘the relationship orientated behavior’ i.e., listening and giving support (Thompson & Aastad, 2012). Thus, situational leadership theory (Hersey & Blanchard, 1969) is considered as offering the benefits of combined strategies that apply consideration to individual and environmental needs, while the contingency model of leadership effectiveness (Fiedler, 1978) provides strategies for predicting team performance in specific contexts.

With these theories in mind, it seems logical that leader’s traits and behaviours have a significant role in directing activities in a way that results in both efficiency and well-being in the work-systems during changing contexts. However, traditional leadership theory relies on face-to-face interactions, which prevent it from being directly transferred to digital settings (Bass, 1981; Stana et al., 2019). In the late 90’s with the movement toward remote work and virtual teams, a subset of IS-researchers revisited leadership theories within these new work structures and organizational environments to clarify their importance in the increasingly digital context (Nicholson et al., 2007). However, Keyworth and Leidner (2004) found no real differences in the effectiveness of leadership approaches between virtual and face-to-face teams, while Nicholson et al. (2007) found that national culture played a more prominent role in determining what was considered effective leadership of virtual teams. As digital technologies have been around for several years, there are now variants of research trajectories on technology-mediated leadership, including e-leadership, distance-, virtual-, digital- or tele-leadership (DasGupta, 2011). Yet, neither of these paradigms can be directly translated to the context of the Covid-19 pandemic, which adds an element of crisis and rushed digital scaling of all work carried out remotely. Furthermore, if considering crisis-related leadership theories, these are usually focused on man-made organizational threats, and not a global and unexpected one (Dirani et al., 2020).

Combined with the under-explored phenomenon of effective leadership and its importance in socio-technical change, little research is yet conducted considering all these aspects. To provide more knowledge into this domain, we consider leadership as being a part of the organization’s more intangible structures (Avolio et al., 2000). This can help us identify the relevance of leadership in the “emergent” interplay between technology and social structures in the present context of WFH. In addition, we are inspired by the principles from Hernandez et al. (2011) when referring to leadership as relating to *mechanisms and loci*. Mechanisms in the sense of explaining the process through which an outcome is produced or is brought about, and loci as the place where leadership happens, being a particular position or place where something occurs or is situated.

3 Methodology

This section elaborates on the methodological approach for the research. First, we explain the ontological and philosophical position we apply to study leadership and socio-technical change. Then we describe our epistemological approach, the data collection process, and the analysis procedure.

Ontologically, we view organizations (not in the physical sense of a place but as a space) as a socio-technical arrangement that consists of sources of social and technical structures (Avolio et al., 2000). These structures interact in a dynamic interplay in which the social adapts to the technical and vice versa. Establishing balance and harmony is assumed pivotal, for these arrangements to produce outcomes of both well-being and efficiency (Sarker et al., 2019) and we presume the act of leadership becomes important in the structuring process.

Philosophically, we reside in the domain of critical realism, as we investigate organizational and technical structures and how they emerge due to activated mechanisms. Thus, instead of aiming to generalize at the level of events, critical realism methodology rests on abstract research, which aims at a theoretical re-description of mechanisms and structures to hypothesize how the observed outcomes can be explained (Strong & Volkoff, 2010). Applying a critical realist perspective holds that phenomena are real (Kempster & Parry, 2011). As such, critical realism considers objects, entities, structures, and mechanisms from both an ontological domain, existing independent of an individual, as well as from an epistemological domain, being socially and historically constructed (Strong & Volkoff, 2010; Mingers, 2000). Therefore, this research is a contextual examination of mechanisms and structures that can be inferred as the explanations of what constitutes effective leadership in virtual settings and in connection with rapid, digital transformational events.

The qualitative research approach employed is a grounded theory procedure, where the generated theory is grounded in empirical data that is systematically gathered in interviews and then analysed (Urquhart et al., 2009). Grounded theory has data sampling, data analysis as well as theory development at its core. Data collection ideally stops when the new data does not change the emerging theory (Corbin & Strauss, 1990). Yet, for the temporal circumstances of this research, data collection started in early May and stopped in late October 2020 and prior to reaching this point. We are aware that grounded theory studies usually undertake a longitudinal character and acknowledge that the data-collection was carried out over a short interval of four months and from the beginning of period two (see table 1).

Periods and restrictions	Period one March 16 to May 15	Period two May 15 to August 15	Period three August 15 to late Oct.
Physical-distance regulative history in DK	Lock-down. Close the offices. Move all work online or stop working.	Open the offices with a limited capacity. Back to work allowed with social distancing guidelines.	New pledge to work from home with episodic local tightening and easing restrictions.

Table 1. Timeline of general events - governmental, restrictive responses

Through the lens of critical realism, we seek to develop an explanation of how leadership approaches activate several latent and effective socio-technical mechanisms in the work-system during the rapid transition from WFO to WFH. We are inspired by recent work on inferring mechanisms from socio-technical change situations (Ropohl, 1999; Strong & Volkoff, 2010; Fischer & Baskerville, 2020) and use prior theorized mechanisms to help us in the abstraction of a more universal pattern across five Danish companies that effectively managed to move work online.

These companies were chosen based on the inclusion and exclusion criteria in table 2. We chose leaders through our network of connections at LinkedIn. We found 15 participants matching the inclusion criteria, in total three from each company. After agreeing to share their experiences with us,

we emailed them with a brief description of the research and a calendar invitation for a Teams/Zoom meeting to conduct a video interview. We notified them that the research was conducted in accordance with the danish code of conduct for research integrity (UVM, 2014). As such, they were recruited through convenience sampling, referring to a non-random approach to selecting study participants (Emerson, 2015). The benefits of this approach are the simplicity and easy accessibility it brings. Yet, results from this method are more skewed and less generalizable, compared to a random sampling approach.

	Inclusion	Exclusion
Companies	Large Scandinavian based companies with a well-recognized brand. Well-driven organizations with a sound economy and perceived as a good place to work. Used to distributed work and experienced a smooth transition to WFH.	Below the limit of large enterprises as defined by the EU as 1000 employees. Do business only in Denmark and have one location.
Respondents	Leaders with member responsibility of at least a team of 3 employees. Min. 5 years of experience.	Department leader of an interviewed team leader. No prior experience with WFH.

Table 2. Inclusion and exclusion criteria for participation

The sample consists of 5 female and 10 male leaders. We assume that they share similarities in their approaches, when coping in the exact same time and situation, and are equipped with comparable digital platforms. In table 3, respondents are numbered and described with title, educational background, gender (M/F/non), age, and team size.

E	Industry/Size	Respondents #1	Respondents # 2	Respondents # 3
A	Finance Sector /+20.000/	Head of Innovation & Experimentation. M.Sc. Eco. and BA. M. Age +30. Team size: 17	Head of Experience & Design. M.Sc.IT Interaction Design. M. Age +50. Team size: 10	Project Lead for Corona Workplace Mgt. M.Sc. Design, Com. & Media. F. Age +40. Team size: 3
B	Jewellery Industry + 25.000/	VP Projects and Portfolio, M. Ms.sc.ba & comp. sc. M, Age +50. Team size: 29	VP Digital Operations & eCom, Vocational Dipl. Retail. M. Age +50. Team size: 20	VP, Global Store Design, Nurse and Ms. Finance and Accountant. F. Age +40. Team size: 10
C	Chemical Industry + 5.000	Vice President, CIO, Ms.sc.ba. M. Age: +50. Team size: 8	Head of IT Coll. & Productivity. Voc. Dipl. M, Age +40. Team size 15	Head of Marketing. M.Sc. Environmental chemistry. F. Age +30. Team size: 5
D	Manufacturing + 6.000	Director, Global People Dev. Master's in psych. M. Age +40. Team size: 8	Vice President Strategy, M.Sc. E-business. PhD. M. Age +40. Team size: 8	Head of collaboration. Prof. Ba. Education. M. Age +40. Team size: 3
E	Medico Industry + 5000	Head of Process Mgt. Graduate Diploma, F, Age +40 Team size: 7	Head of Project & Portfolio Mgt. Msc.it. -e-business, M. Age +40 Team size: 55	Head of CIO Services. Graduate Diploma. F. Age +40. Team size: 5

Table 3. Overview of respondents (#) and Enterprises (E).

The first three interviews took part during period two of restrictions and only in Enterprise A, while the subsequent interviews with the remaining enterprises were conducted during period three (see table 1). All interviews took one hour and took place during working hours. Respondents were situated in their working locations to make it as convenient as possible. In terms of the data-collection, a semi-structured interview approach was chosen. An interview script (see table 4) steered the interview, while still allowing the interviewees to express themselves freely and impact the interview flow. Inspired by the social-technical perspective (Sarker et al., 2019), the script focused on social and

technical issues at work, and leadership challenges of establishing productivity and well-being, when deprived of physical proximity to and between team members. More specifically, we explored the shift from physical presence to virtual presence, including communication, social connection and collaboration practices, technical challenges, and opportunities, as well as work routines. The script was both thematic and aimed to avoid biasing the responses, as prescribed by Corbin and Strauss (1990).

<p>First part - Background: Tell me a bit about yourself. What is your role / responsibilities? For how long you have been a leader / your current job? How many do you “lead”? Can you explain what your department/team is responsible for?</p>
<p>Second part - Let us first talk about your leadership experiences before the pandemic (think back) What are the work circumstances / setup of your daily work? How often do you (physically) interact with your team members daily? Are you usually around the employees you are managing? Which technologies facilitate your management and what is their role in your work?</p>
<p>Third part - During the lock-down (period 1). Explain to me how you experienced the lock-down in your unit and more specifically – how did it affect you (and why)? Work routines? Use of technologies (Video, Email, Phone, Chat) when? Productivity? More or less? Social / team spirit? Other? What actions/adjustments did you take to accommodate for the changes? How did you accommodate for the lack of communication by not being physically together with your colleagues – if you did? E.g., new situations: A new colleague / colleagues outside your team that you normally socialize with at the coffee machine? What did you do as a leader to keep your employees thriving and successful (and not feeling lonely)? And that you were meeting goals? Establishment of new ways of meetings/greetings/conversations? Why were those needed? What effect did they have? Difference between physical and virtual meetings? Benefits and limitations? How did your employees react to these changes – based on what you have observed and heard from them? Were they able to “lead themselves”? Did you support them in this process (how)? Which leadership qualities did you find relevant during these times? New than before? Challenging?</p>
<p>Fourth part - After country order of opening with restrictions and now semi-working from home order? (period 2 and 3) How were things? Everything back to normal? What do you take with you from these experiences? Working more/less from home? Less/more meetings? Mental and physical health more in focus? Why? Others? Going forward, has your role as a leader changed? More or less “important”?</p>

Table 4. Interview guide

The interviews followed a soft laddering interview technique by including follow-up questions that built on the interviewees’ answers (Schultze & Avital, 2011). Likewise, themes that were not organically part of the interview script, but emerged from an interview, were brought up in the subsequent interviews with other respondents to maintain elements of a dynamic interplay between data collection and analysis, as required by grounded theory (Urquhart et al., 2009). As an example, after interviewing A1, A2, A3, and B1, it became clear that it was effective to establish a cadence and a rhythm to work. When subsequent interviewees revealed related tendencies, we inquired more thoroughly into it to get a deeper understanding of how this aspect of leadership was interpreted. Overall, we took turns in interviewing and taking notes. The notetaker had the possibility to add questions in the end by inquiring into certain aspects that surfaced yet needing more explanation. All interviews were recorded and transcribed using the artificial intelligence (AI) transcription tool ‘Otter,’ where all transcriptions were manually revisited to correct flaws and incorrect interpretations by the tool. Overall, we collected more than 224 pages of qualitative data.

3.1 Data analysis

Data analysis is at the core of grounded theory with the purpose of securing that all data is examined in a structured way (Eisenhardt, 1989). Three types of coding made up the analytical process, namely open coding, axial coding, and selective coding following the approach of Corbin and Strauss (1990). The analytical process was initiated with open coding that allowed us to order and code the data. We assigned relevant interview statements a guiding label, which resulted in a total of 30 different codes. Next, to reduce overlaps between the codes and make them more indicative, the 30 codes were condensed into 19 codes. As an example of this condensation, four open codes labelled ‘Trust in followers,’ ‘Not observing or overhearing’, ‘Agile and self-managing teams’, and ‘Employee autonomy’ were all clustered into one axial code of ‘Increasing trust and empowerment by being less involved’ (see code 4.2 in table 5). Then we made connections between the 19 codes and found five categories of concerns through the process of axial coding. We identified five distinct, yet interdependent, categories. Table 5 displays an overview of the result of these analytical steps with categories assigned with several codes, supported by a quote. In addition, we grouped the categories in 1) immediate response, when coping with the WFH order, and 2) routinary response, when lock-down was eased.

<i>Immediate response</i>		<i>Routinary response</i>		
Category 1 Socializing for continuity, belonging and community feeling	Category 2 Individualizing work to accommodate for differences	Category 3 Institutionalizing efficient work-routines in the more virtual work-setting.	Category 4 Transforming leadership approaches.	Category 5 Learning as a new leadership responsibility.
<u>Code 1.1:</u> Digitizing coffee talks through short, virtual meetings. “just as a way to connect with each other the way you would usually do over the coffee machine.” (B3)	<u>Code 2.1:</u> Self-management of time used for tasks. “the only thing I will keep you accountable for is your results.” (B1)	<u>Code 3.1:</u> Virtual meetings first “I expect that every meeting will be remote since we have agreed that every single meeting should be either remote or physical.” (D1)	<u>Code 4.1:</u> A push for modern leadership: “the whole lock-down period was helping me to sort of put that nail down to finally give away that [management] mandate.” (C2)	<u>Code 5.1:</u> A window for new opportunities. “it has definitely changed a lot and will continue to influence because it accelerated a lot of the digital, agile ways of working.” (E2)
<u>Code 1.2:</u> Co-creating a digital sense of community and of belonging. “You kind of get together and face the common enemy.” (D1)	<u>Code 2.2:</u> Structuring work in individual situation. “during Corona it's been like, Okay, now I have to go pick up kids at two o'clock because that's kind of what the world looks like now.” (C3)	<u>Code 3.2:</u> Increasing connectivity and alignment. “one of the ways that we have changed, is that now we all have the daily [agile] stand-ups, even in the leadership teams.” (E2)	<u>Code 4.2:</u> Increasing trust and empowerment by being less involved. “it is also forcing me a little bit to not involve me perhaps in so many things that I would otherwise be involved in.” (D2)	<u>Code 5.2:</u> New WFH flexibility is emerging. “It has also changed my own perception on it, both for myself and for my people, and still I think there is a proper balance to come.” (A2)
<u>Code 1.3:</u> Checking in on each other's well-being. “I call people up just to	<u>Code 2.3:</u> Focus on individual needs and preferences. “So, I tried to	<u>Code 3.3:</u> Increasing more informal virtual dialogue. “So actually, some	<u>Code 4.3:</u> The motivating and empathic leader. “I would (...) ask you	<u>Code 5.3:</u> Maintaining the new habits. “over time it probably

<i>chat, doing a video call to see, calling and checking on how people are doing.” (D3)</i>	<i>manage them differently by where I knew they were in life.” (E1)</i>	<i>relationships got a little bit more, or got a little less formal, which was quite nice.” (E3)</i>	<i>to think about what’s necessary for you. And then how I can help you get that.” (E3)</i>	<i>needs to be sort of re-induced, at some point, because otherwise, it goes away.” (C2)</i>
Code 1.4: Virtual socializing events. <i>“We did all the usual stuff with the Friday bars and games and online events and a lot of that.” (C1)</i>	Code 2.4: From shared work-setup to individual setup. <i>“I’m very aware that I may have more space and more opportunities in my apartment than some would have.” (B3)</i>	Code 3.4: Situational adaption of cadence in meetings and check-ins. <i>“Cadence is important. But it is a top- down thing as the only ones who can instil cadence is the ones that say now, we need to counterfeit.” (C1)</i>	Code 4.4: Clearer instructions and guiding when delegating. <i>“I’m more aware of trying to give clearer guidance, the first time... not to risk that, people will stray off in a different direction.” (D2)</i>	

Table 5. Categories and codes

Following the grounded theory procedure, we then subjected the categories to selective coding, that eventually established the central phenomenon of mechanisms (Strong & Volkoff, 2010). Having in mind that leadership pertains to mechanisms and certain loci from Hernandez et al. (2011), we proceeded with abstraction. In the next section we report on the findings from the analysis.

4 Findings

We can now theorize on how leadership was enacted during the transition from WFO to WFH and explain which mechanisms we abstracted from the data. Eventually, we can explain how leaders effectively restructured their socio-technical work-systems to reach both productivity and well-being. In table 6, we present the mechanisms, their loci and from which categories they were abstracted.

Mechanisms	Loci
<u>Socialization.</u> Socialization was brought into virtual initiatives to accommodate for the sudden physical distance with well-being as an outcome. Yet, maintaining shared norms and culture around work, were narrowed down to activities of engaging in social events, continuations of relations, and maintaining a community feeling. Several tools and platforms provided the opportunity. (Abstracted from category 1, table 5)	Team-level 1:m and m:m Mediated by teams/zoom.
<u>Individualization.</u> We witness how the process of individualization was enforced by both members and leaders, as an effect of the sudden shift from a shared and organized physical structure, shifting to individuals taking responsibility over a personalized work-structure fitted to needs, preferences, constraints, and possibilities. Technology at hand to support individual preferences created a momentum and provided productivity and well-being. (Abstracted from category 2, table 5)	Individual level. 1:1. In teams/zoom/chat and email
<u>Institutionalization.</u> Because of the immediate response mechanisms and subsequent processes, we see a move toward institutionalization as a process that encompasses the generalization of new	Individual and team-level

<p>routinized activities or behaviours obtained through socialization and individualization processes in the rapid shift from WFO to WFH. Leaders enable this process by providing a rhythm and cadence to meetings and dialogues, as it seems valuable to productivity. (Abstracted from category 3, table 5)</p>	
<p><u>Leadership Transformation.</u> We ultimately see a transformational process in how leadership is enacted to focus on people’s well-being. This requires empathy with team-members, trust and for leaders to let go of control. The transformational process is supported by institutionalizing the processes of individualization and socialization to work in a synergistic manner with productivity and well-being as an outcome. Maintaining this synergy ads new responsibilities to leaders to continuously learn and balance the socio-technical work-system and its outcomes. (Abstracted from category 4 and 5 in table 5).</p>	<p>Leadership level</p>

Table 6. Abstraction of four mechanisms and loci

During the analysis and abstraction process, we sketched an underlying, emerging pattern. This sketch was created by ordering the immediate and routinary responses in relation to main events to describe what took place in general terms during the entire period. Eventually, we settled on the more fixed illustration in figure 1, that shows how effective leadership approaches leads to outcomes of well-being and productivity in the work-system.

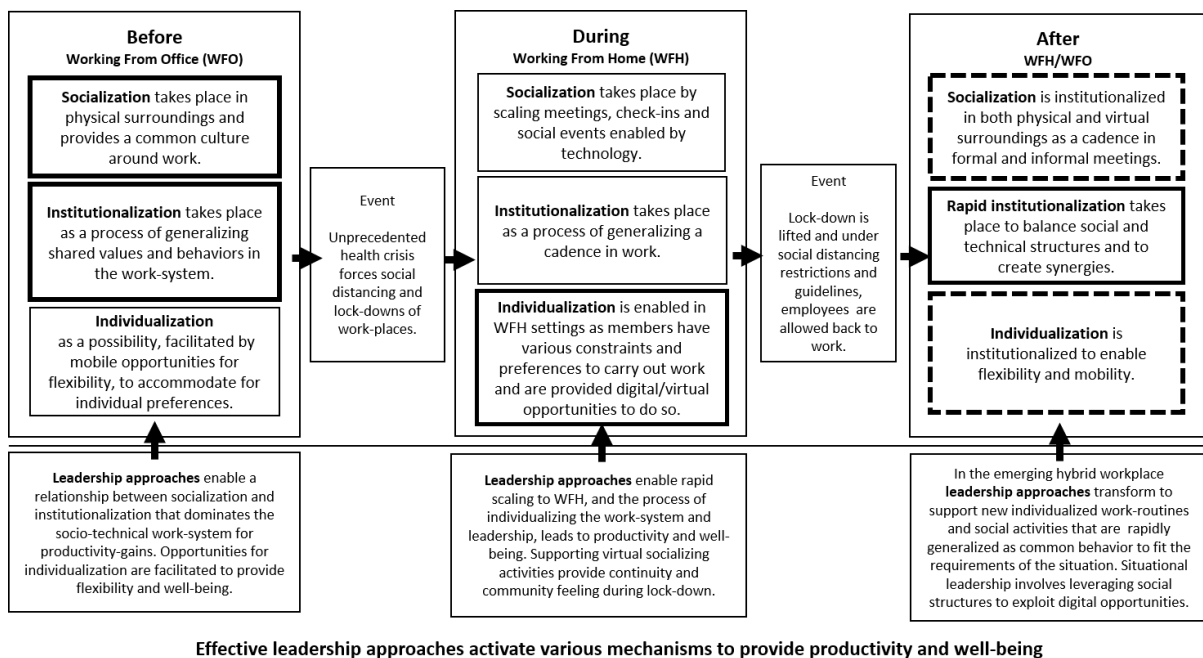


Figure 1. General pattern of mechanisms activated through active leadership approaches.

For the sake of analytical clarity, we distinguish, in figure 1, between three situations: 1) ‘before’ the covid-19 lock down, signified by being primarily WFO; 2) ‘during’ immediate lock-down signified by entirely WFH; and 3) ‘after’ lock-down, signified by a hybrid of WFH/WFO, all three situations separated by two events a) lock-down and b) lifting of lock-down. In the bottom of figure 1, we explain how certain leadership approaches activate a situational combination of mechanisms (from table 6) that can explain the processes through which the outcomes of well-being and productivity are produced. The lines around the inner boxes in the ‘before’, ‘during’ and ‘after’ situations illustrate the dominant mechanisms (thick lines), less dominant (thin lines), and dynamic and synergistic processes

(dotted lines). With this pattern in mind, we can now theorize on how the studied leaders' approaches, activated and ultimately enabled synergies among the abstracted mechanisms, to harmonize and restructure their work-systems during and after the abrupt socio-technical change.

In the emergent hybrid workplace, we find that the process of rapid institutionalization was central to achieving successful socio-technical change. More specifically, our findings display that with the disruption in working structures, routines, and behaviour caused by the crisis and the rapid upscale of WFH, both leaders and members were forced to adapt to a new reality. In doing so, they attempted to find a balance of both applying existing routines and introducing new ones. Enabled by easy-to-use malleable cloud technology, the mediation was fitted to the situation. Experience from 'before' and 'during' created new structures that are continuously evaluated and adjusted to settle into a hybrid structure, combining both individual and social structures.

Rapid institutionalization leads to what we infer as 'institutionalized socialization' and takes place because of the WFH experiences. Whereas social interaction in WFO automatically takes place in the usual and casual physical interaction over the desk or coffee machine, leaders emphasize how socialization must be prioritized and more actively initiated to take place virtually. More specifically, removing the possibilities for physical social interactions, highlights their importance and fosters an institutionalization of new, social routines to remain connected. In these new routines, the leader structures consistent check-ins with everyone to remain involved and aligned, and particularly in the beginning of the lock-down, the dynamic of the meetings shifted to an increased focus on well-being in personal situations. Furthermore, numerous leaders emphasized that socialization was formalized and scheduled in the beginning of the lock-down, but along the way, interactions became more spontaneous through calls or chats. In the hybrid structure with WFH and WFO intermingling in period three, WFO days are often synchronized across the teams to ensure physical presence at the same time and on days with available interaction time, as opposed to days with back-to-back meetings or need for focus in WFH. It becomes even more the leaders' responsibility to ensure alignment of physical presence in WFO, and when that is not possible, creating a digital sense of community through virtual, socializing events. Concludingly, this combination displayed that where socialization took place spontaneously in physical circumstances, it is more institutionalized and planned in a virtual environment.

Rapid institutionalization likewise leads to what we infer as 'institutionalized individualization' and takes place when prior structures from WFO - extrinsically defined by management through framing of office times and team routines - converge with the intrinsically defined structure by the individual employee in WFH. A rapid shift overnight, forced the individual to plan and control his/her own structures and routines immediately. The degree of self-management increased drastically, both in terms of carrying out work despite not being physically observed, taking care of oneself by remembering to include breaks, as well as being fully responsible for dividing work and leisure time, despite these two events being carried out in the same environment. As a result of this transition, the leaders' role came to involve inspiring and encouraging members to reflect on current routines or take up new ones, rather than firmly structuring the settings. In return for the work autonomy, employees were not only given more freedom and flexibility to structure their routine according to their personal life and preferences, but the differences between individuals also became more apparent. This seems to be particularly enabled by video meetings that broadcast the homely WFH setup with insights to employees' private lives. While resulting in a more personal connection between colleagues, video also induced an increased understanding and accommodation for the individuals' own situation, preferences, and needs. This individualization was transferred into the hybrid WFH and WFO intermingling, and where employees decide themselves when they WFH and when they WFO. As such, with increasing WFH comes an institutionalized individualization that hands more freedom and responsibility of work structures to the individual, producing an increase in well-being and productivity.

The synergistic nature between the mechanisms of institutionalization, socialization and individualization arises because of situational leadership approaches. Correspondingly, as

management in WFO frames office times and team routines, leaders' physical presence allows for walking around, feeling the office vibe, detecting non-verbal cues and overhearing conversations. When WFH, the leader is forced to be less involved by being unable to overhear all conversations or observe actions but can only judge performance on deliveries and employees' statements about themselves and others. Nonetheless, an increase in empowerment requires an increase of trust. This tendency aligns with the increased focus on agile work methods, as evident in numerous of the examined companies. In the agile setup, the teams are given as much mandate as possible, and the goal is self-managing teams and individuals. Though, interaction is still needed, as it requires more active and clear guidance between leaders and members, where facilitation of meetings is needed to obtain the usual alignment, as with institutionalized socialization. Additionally, the WFH dynamic influences the leaders' role, as it becomes more about guiding, motivating, and empowering the employee, while being available if help or direction is needed. Furthermore, because of the institutionalized individualization, the newly visible differences between employees calls for an increased focus on individual leadership. More specifically, leaders can increasingly connect with members through one-to-one and, as such, adjust and lead in a customized way to fit each member. This action particularly displays the need for situational leadership, where leadership cannot follow a trait or a plan, but must be customized and contextualized to the given context and person. To implement this, situational leadership, empathy, and emotional intelligence becomes even more important leadership qualities to support employees and interpret the more complex signs of well-being via digital technologies.

5 Discussion

Our grounded theorizing adds several new perspectives to the domain of effective leadership and how they leverage the social structures needed to fully adapt to the new digital reality of WFH/WFO. These insights align well with the present challenges of leading socio-technical change effectively.

Regarding contingency approaches, our findings provide novel insights. In relation to Hersey and Blanchard' (1969) theory of situational leadership behaviors, our findings suggest how the strategy of delegation seems effective, as it activates the mechanism of individualization, while selling seems to activate socialization. The situational leadership approach taken also elaborates on Fiedler's (1978) contingency theory, because it underlines how the leadership style depends on the features of the situation. A favourable situation is when leader-member relation, task structure and/or position power is high. Under these circumstances, a leader is supported by the situation, because it provides some influence and potential power. Task oriented leaders are predicted to be more effective in highly favourable or highly unfavourable situations, while relationship oriented leaders would be more effective in moderately favourable situations. Our findings suggest that both orientations are equally important to effective leadership in WFH-situations, no matter the degree of favourableness. Task-orientation in terms of providing clear guidance and instructions in the beginning of task-delegation promoted efficiency, and relationship-orientation in terms of acknowledging and including individual variances provided well-being.

We find that DasGupta' (2011) list of e-leadership skills still prevails. Our findings support that trust is an essential quality in the leader-member relationship. Trust is not something that can be quickly obtained, instead it must be built through a history of reliable behaviour. This aligns well with our findings, stating that the interviewed leaders found trust and empowerment even more important in the virtual setting. However, DasGupta (2011) suggests that e-leaders experience new challenges regarding communicating effectively and bridging physical distance. Communication has also become more complex by taking place through an electronic platform; thus, leaders are challenged in communicating enthusiasm and creating a viable presence. In comparison, our study revealed that leaders approached the challenge effectively by institutionalizing both socialization and individualization processes. They ensured that guidelines were verbalized in a simple and understandable way, they were more available if help was needed, and they were increasingly honest

and open in their communication. As such, the interviewed leaders seem to have had, maybe unconsciously, a particular focus on simplifying their communication.

In relation to socio-technical change, our study delivers insights into the enactment of leadership in the immediate move from WFO to WFH. While our study has examined work-systems that had the technologies and familiarity in place for remote work and digital meetings, none were prepared for the rapid upscale. As a result, the immediate response to the change was to transfer routines from WFO into the WFH setup, but over time, new norms and dynamics were shaped. Drawing on arguments from Pasmore et al. (2019), organizations lack social capabilities to adapt to rapid digital change. Nonetheless, the circumstances of the crises forced them into acquiring these and required leaders to participate actively and effectively in the organizational and social restructuring of their work-system. In a virtual setting, leaders facilitated the interactions and actively took part in members' personal and professional development. By being close to the individual, the leader can intervene when needed, and when not needed, step back and empower members to make their own decisions. As such, when leadership is involved more explicitly in socio-technical change, the processes of socialization and individualization works together, instead of working as opposites. Moreover, members of the socio-technical work-systems have learned the possibilities of rapid changes and have experienced how they can respond and alter their behaviour accordingly, if needed and commanded. Nonetheless, it is important to note that it seems like the employees were both able, motivated and willing to meet these rapid changes, as it was required from a global, unforeseen, and external threat, and their behaviour might have been different if reacting to a man-made organizational threat, as usually seen in crisis related leadership theories (Dirani et al., 2020) and in the commanded change intervention as described in Huy (2001) often materialized as resistance to change.

As an overall contribution, our study has developed a view of mechanisms that were activated to balance and develop the social aspects to adapt to the new technical and digital reality. More specifically, the crisis and rapid digital transformation eventually triggered a combination of the mechanisms of socialization, individualization, and institutionalization providing new ways of working and relating. As our study revealed, the need for socialization when being physically dispersed, gave rise to new virtual socialization spaces. To accommodate for the lack of physical presence and connectivity, virtual events were created, and continuous check-ins were scheduled. Individualization was activated because of WFH in one's own, personal atmosphere. The experiences of WFH have forced both leaders and members to respond to a rapid change and alter their routines to a new reality. In turn, this has generated reflections upon both previous and new routines, which can be utilized in a combination to shape the ideal, individual routine. This allowed for a substantial part of work to be carried out much more individualized. As such, leadership enforced individualization as a mechanism to cope with the lost shared space at the office. The increased autonomy and flexibility enable a more balanced outcome of well-being and efficiency during digital transformation, as requested by Mumford (2006), Pasmore et al. (2019) and Sarker et al. (2019). Nonetheless, the individual is also handed more responsibility leading oneself in the process of separating work and private life, as the WFH circumstances blurs the lines. Furthermore, the increased individualization of work also influenced the need for institutionalizing certain elements and work processes were adjusted and institutionalized rapidly. More specifically, the usual, spontaneous encounters when WFO were formalized and in an increasing number scheduled to create a space for connecting. The compulsory remote work forced leaders to face and adjust to the new work structures and fit their response to the employees' various reactions to the change. While leaders were required to maintain their usual tasks of meeting goals and performance indicators, their work processes were expanded to prioritize their employees' emotional stability. This requires new capabilities and qualities from the leaders, which importantly, some leaders need to activate, and others need to develop.

Lastly, we have theorized dynamics in the emergent hybrid WFH and WFO work-setting. Thus, insights from this study can inform future leadership practices. It remains to be seen how Covid-19 have finally impacted the future of leadership in digital work-settings. Nonetheless, the situation represented new challenges and learnings for both employees and leaders. These might be

implemented, or merely just forgotten, as organizations go completely back to business. In line with the predictions of the interviewees, Boston Consulting Group (BCG) (2020) predict that empathy and flexibility will become increasingly important leadership qualities in the future. In line with the study from Fischer and Baskerville (2020), we foresee the role of the leader will be to enforce and encourage individualization - and to a large degree - self-management, while also seeking to institutionalize certain work-processes and socialize employees with the workplace through frequent, transparent, and truthful communication. Increasing empathy and attention to personal well-being seem of higher importance, which aligns with the growing focus on emotional intelligence in leadership literature (Dirani et al., 2020).

As a final note, we are aware of the limitations of our study, as we have exclusively interviewed leaders and not their team-members, who might have other experiences. In addition, we did not carry out a longitudinal single-case study, which is the preferred approach in grounded theory (Strong & Volkoff, 2010). However, we looked across case-settings to abstract a pattern of leadership approaches from five renowned Danish companies with a global reach, represented by experienced and highly educated and effective leaders.

6 Conclusion

We gathered data from 15 effective leaders and analysed their approaches during eight months of various restrictions related to the Covid-19 pandemic in five large Danish companies. A massive scaling of digital adoption took place and leaders were required to lead their teams virtually moving to WFH. We labelled this a major and abrupt socio-technical change and inquired into situations, where both well-being and productivity had prevailed. We gained knowledge on how leaders activate several mechanisms to continuously harmonize social and technical structures to reach these outcomes. Through grounded theory we generated a new understanding of effective leadership approaches, based on critical realism, and provide the building blocks for a new theory on how leaders pursue situational leadership approaches by actively providing synergy between mechanisms of socialization, institutionalization, and individualization in their socio-technical work-systems. Results from this study can provide an understanding of how effective leadership can reach both well-being and productivity, by restructuring the social and technical structures on a continuous basis by activating the synergies between mechanisms.

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