Submission to Sub-theme 14:

[SWG] The Role of Organizing in Extreme Contexts

Using masks amidst the COVID-19 pandemic in a Swiss hospital: a process study on the coping stage of organizational resilience

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Abstract: In this paper, we aim to advance a processual understanding of organizational resilience. We focus on the stage of coping with an adversity and explore the processes of an organization generating and implementing a response. Situated in a Swiss hospital during the COVID-19 pandemic, we use real-time qualitative data on developing and implementing a guideline for face masks, that we analysed with a contextualist framework. The resulting model depicts and distinguishes the two-interrelated processes of generating and implementing the response. In each process, understanding and acting occur in parallel and not as a sequence. Facing the same uncertainty, we explain the process dynamics and inter-relations with the different situations the involved actors find themselves in. These insights suggest for a processual understanding of organizational resilience that understanding and acting on an adversity occur in parallel and involve different processes due to the actors and their specific coping situations.

Introduction

The COVID-19 pandemic has spread globally. The pandemic has placed healthcare organizations and their staff at the forefront of coping with this adversity while facing uncertainty around the virus, its spreading, diagnostics, or treatment. At the epicentre of the pandemic, health care workers (HCW) in hospitals are at risk of infecting themselves, patients and other staff-members. To cope with this risk under conditions of uncertain or limited availability of protection gear, hospitals generate and implement responses. These responses include, among others, the handling of face masks. Its development and use is the empirical focus of this study.

We place this empirical focus in the topic of organizational resilience. It concerns the organizational capacity of bouncing back and handling crises or adversities (Sutcliffe & Vogus, 2003; Weick & Sutcliffe, 2007; Wildavsky, 1988; Williams et al., 2017). Calling for process studies, resilience scholars have argued to better understand not only the conditions and outcomes, but how organizational resilience works in situ (Barton & Sutcliffe, 2009; Duchek, 2019; Kahn et al., 2018; Linnenluecke, 2017). To further develop a processual understanding of organizational resilience requires to address the following open issue: Processual conceptualizations involve sequential stages as organizations prepare or anticipate, cope or respond, and adapt or learn from adversities (Duchek, 2019; Williams et al., 2017). During the coping stage, we know that actors generate and implement a response to an adversity (Duchek, 2019). However, we still know little of how the generation and implementation unfolds so that the response is "widely accepted and adopted" (Duchek, 2019, p. 15). Furthermore, the actors generating and implementing the response are not necessarily identical (e.g. Barton & Sutcliffe, 2009; Faraj & Xiao, 2006; Weick, 1993; Williams & Shepherd, 2016) but different in an organization.

These open issues prompt our research question: How does an organization with different actors cope with adversity that unfolds over time? Our aim is to contribute to a processual understanding of organizational resilience by investigating the unfolding events of generating and implementing a response to cope with the adversity of infection risk.

Following a weak process view (Van de Ven & Poole, 2005) our study contains rare real-time data to address the need to study organizational resilience in situ (Barton & Sutcliffe, 2009; Duchek, 2019; Kahn et al., 2018; Linnenluecke, 2017). We trace the dynamic development and use of a hospital's guideline on face masks with qualitative data of observations, daily

interviews with HCW and archival documents. We theorize this process data (Langley, 1999) using contextualism (Pettigrew et al., 2001) and develop a model of two inter-related processes, of authoring (generating) and using (implementing) the mask guidelines. Their interaction led to the final guideline, i.e. the response to cope with the adversity of protection from infection. To explain the observed dynamic, we draw on the distinct situations the different actors found themselves because they faced the same uncertainty regarding the virus, its spreading and the availability of protective face masks.

At this early stage, our contribution are modest: First, our empirical study provides a rare example of real-time data that others have called for in order to explore organizational resilience as process (Duchek, 2019; Sutcliffe & Vogus, 2003; Williams et al., 2017). Second, we highlight that a better understanding of coping with adversity requires to incorporate the respective situations actors find themselves in. Thereby we explicate that research should systematically account for the different actors involved. Third, tracing the process of generating and implementing a response shows their dynamics and inter-relation that adds to existing explanations of the challenges when developing organizational resilience.

In the next section we elaborate on the processual turn of organizational resilience and argue the research question. The Method section shows the methods and depicts the analytic steps. The Result section introduces the model and illustrates it with data. We address the above open issues in the Discussion section before concluding the paper.

Background: organizational resilience as process

There is a growing interest in organisational resilience (Duchek, 2019; Linnenluecke, 2017; Ruiz-Martin et al., 2018; Weick & Sutcliffe, 2007; Williams et al., 2017). Organizational resilience is "the process by which an actor (i.e., individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity" (Williams et al., 2017, p. 742). In recent years, scholars have studied organizational resilience in diverse settings, e.g. the aftermath of earthquakes (Williams & Shepherd, 2016), bushfires (Barton & Sutcliffe, 2009; Shepherd & Williams, 2014) or extreme weather events (Linnenluecke & Griffiths, 2010; Linnenluecke et al., 2012).

In the past, organizational resilience often appears as a capacity, ability, or capability (Duchek, 2019; Lengnick-Hall et al., 2011; Ruiz-Martin et al., 2018) to explain the successful coping with a crisis. These studies help to identify important components of organizational resilience, like that of sensemaking (Weick, 1993) or early anticipation (Boin & Van Eeten, 2013). Also, they identified organizational processes and structures that enhance organizational resilience (Faraj & Xiao, 2006). These studies raise the question, what organizations actually do to achieve organizational resilience and how resilience works (Barton & Sutcliffe, 2009; Boin & Van Eeten, 2013; Duchek, 2019; Duit, 2016; Kahn et al., 2018; Linnenluecke, 2017).

Addressing this question of how resilience works as organizations deal with adversity calls for a processual understanding (Duchek, 2019; Sutcliffe & Vogus, 2003; Williams et al., 2017). Their and other concepts (Linnenluecke et al., 2012) ask how resilience and the underlying dynamic unfold (Barton & Sutcliffe, 2009; Kahn et al., 2018; Linnenluecke, 2017). Sutcliffe and Vogus (Sutcliffe & Vogus, 2003, p. 97) argued for a processual perspective on resilience because it does not imply continuous invulnerability that a capacity-based understanding of resilience would suggest. More specifically, a processual perspective recognizes the "possibility of fallibility and the probability of successful coping" (p. 97). Processual understandings emphasize the interactions between actors and the environment (Williams et al., 2017) but also the "micro-level interactions that underlie dynamic organizing" (Barton & Sutcliffe, 2009, p. 1329). Furthermore, Williams et al. (2017) also introduce a distinction of crisis as an event – like an earthquake – and that of unfolding events over time, that have different implications of coping.

Recent processual models of organizational resilience distinguish different stages or phases, like anticipation, coping and adaptation (Duchek, 2019; Williams et al., 2017). Anticipation includes early detection of signals for crisis as well as anticipatory adaptation (Duchek, 2019). Coping means to generate an understanding of the crisis, a response and its consistent implementation within an organization (Duchek, 2019). Adaptation entails ways of learning from the crisis and the response (Sutcliffe & Vogus, 2003), as in retrospective sensemaking (Weick & Sutcliffe, 2001). All stages involve a combination of understanding and acting (Duchek, 2019). During anticipation and adaptation, this combination can be sequential because a crisis occurs before coping and before learning.

In comparison, the coping stage is highly dynamic because actors find themselves admit the adversity. Here, the combination of sensemaking and acting remains under researched also

due to a dearth of in situ real-time studies (Barton & Sutcliffe, 2009; Kahn et al., 2018; Linnenluecke, 2017). In order to better understand the dynamics of coping as a combination of sensemaking and acting, we will address two related open issues:

First, we still know little of the temporal dynamics of the combination of sensemaking and acting. This dynamic occurs when a crisis is not an event but unfolds over time (Williams et al., 2017). For a crisis as a singular event – like an earthquake (Williams & Shepherd, 2016) – understanding may well precede acting (Barton & Sutcliffe, 2009; Shepherd & Williams, 2014; Weick, 1988, 1993; Williams & Shepherd, 2016). As an event occurs, actors first have to understand the situation e.g. the destruction of an earthquake to define actions to alleviate suffering (Williams & Shepherd, 2016). In this case of an adversity as an event, the assumption that "only if people understand the crisis situation are they able to act on it" (Duchek, 2019, p. 14) implies a sequence of understanding before acting. However, this implication becomes problematic with an adversity as process, for example with wild-land fires (Weick, 1993), or a pandemic. These adversities unfold dynamically over time and implementing firefighting strategies (Barton & Sutcliffe, 2009; Weick, 1993) do not wait until the adversity ended as in the case of an event. Instead, the adversity triggers acting while still gaining an understanding (LeBaron et al., 2016; Rudolph et al., 2009). To our comprehension, this synchrony has not yet been studied in-depth.

A second open issue during the coping stage is that resilience studies tend to imply that actors who generate a response and implement it are identical. This is the case for individuals and groups, like firefighters (Barton & Sutcliffe, 2009; Weick, 1993), emergency response teams (Faraj & Xiao, 2006) or entrepreneurs after an earthquake (Williams & Shepherd, 2016). These actors make sense of the adversity, generate responses and implement them. Organizations, however, are different because actors work in different departments and hierarchies. Here, the actors who generate the response are not necessarily identical to those implementing it (e.g. Bandara et al., 2020), but may share the goal for a consistent and widely accepted response (Duchek, 2019). Expanding to different actors adds to the temporal dynamic of coping because of different interests, and understandings of the adversity and the responses (Kahn et al., 2018; Weick, 1995). Considering the different actors involved in coping is a second open issue to address for a processual understanding of organizational resilience.

These two open issues prompt our research question: How does an organization with different actors cope with adversity that unfolds over time? By addressing these open issues we aim to

contribute to a processual understanding of organizational resilience. Our focus is on the stage of coping with an adversity as process. The significance of the other stages withstanding, the coping stage is central because it defines the successful or failed handling of a present adversity. Furthermore, the coping stage promises to surface the dynamic of different actors involved that aim to understand the adversity and act on it.

Studying our question is timely for theoretical and practical reasons. As we currently experience a global health crisis and expect other grand challenges, like climate change, better understanding the dynamic of resilience supports organizations to sustainably respond. We acknowledge the micro-level interactions of organizing in order to understand organisational resilience in situ (Barton & Sutcliffe, 2009; Duchek, 2019; Kahn et al., 2018; Linnenluecke, 2017). Theoretically, our study addresses the calls for incorporating a temporal dimension (Williams et al., 2017) and thereby pursues in-depth understanding of how sensemaking and acting unfold (Duchek, 2019). As these processes may associate with different actors, we suggest expanding research on organizational resilience in this direction. Doing so can help to create a more nuanced understanding of the known challenges around organizational resilience, like individual interests, perceptions, beliefs (Barton & Sutcliffe, 2009; Baumard & Starbuck, 2005; Cannon & Edmondson, 2005; Maitlis & Sonenshein, 2010; Weick, 1993), political power games, composition of teams (Barton et al., 2015; Barton & Kahn, 2019; Carroll, 1998; Kahn et al., 2018; Tucker & Edmondson, 2003) or multiple perspectives and divergent goals (Greenwood et al., 2011; Kahn et al., 2018; Weick, 1995).

Our theoretical approach uses the initial definition by Williams et al. (2017, p. 742) and their consideration of crisis-as-process because an adversity unfolding over time resonates with the COVID-19 pandemic. Our study focuses on the coping stage which Duchek (2019) conceptualizes as a combination of sensemaking and acting. In terms of process, we build on so-called weak process view (Cloutier & Langley, 2020; Langley, 1999; Van de Ven & Poole, 2005) that defines process as events unfolding over time (Van De Ven, 1992). More specifically, we opted for a contextualist approach (Pettigrew et al., 2001) of theorizing from process data (Langley, 1999). In order to depict the temporal dimension of unfolding events, we use the term pacing which refers to the rhythm of activities or urge for rather faster or slower responses (Weick & Quinn, 1999). This urge for action results from the uncertainty that accompanies an adversity. Uncertainty is the “imprecision in estimates of future consequences conditional on

present action" (March, 1994, p. 178). Uncertainty concerns the future development of a perceived situation, which is entangled with different forces that shape the trajectory and in which actors make sense of and act in their respective ways (Rüegg-Stürm & Grand, 2015, p. 181).

Methods

Building on calls for real-time studies in situ, we conduct a single case study (Yin, 2017) and accompany a hospital handling the COVID-19 pandemic in Switzerland since March 16, 2020. Our data covers a period of about 1 month, from March 5 until April 2, 2020. This time frame marks the development of the guideline concerning the use of face masks.

Our choice of data gathering considered the expected intensity of the COVID-19 pandemic for health care workers (HCW). We strived to consume little time of HCW, and refrained from scheduling wide-range interviews, which we will conduct once the situation has calmed down. Also, we aimed to receive temporal data in close intervals. To this end, we were granted access to internal staff information, participation in task force meetings, and daily interviews with two staff members. Finally, we agreed to present our findings of the hospital's handling the COVID-19 pandemic to its leadership and staff in Fall 2020 in order to generate lessons learned for a possible second wave of hospitalizations, and future pandemics.

The data set includes archival material by the National Center of preventing infections (Swissnoso) and FOPH (Federal Office of Health), that staff members regard as important external references for developing the guidelines; archival material by the department of Hospital Hygiene that is in charge of authoring the guidelines (meeting minutes, internal releases of information to staff); weekly meeting observations of the department of Hospital Hygiene (Viro-TaF) and of the hospital's task force (Ho-TaF); and daily interviews with a hospital virologist and the nursing director for internal medicine. As mentioned, a series of retrospective interviews will follow as well as feedback workshops to triangulate our findings.

Our analysis employs a contextualist approach (Pettigrew et al., 2001). It distinguishes process, content and context. Content was the mask guideline (authored response). The internal context comprised the authors and users, and the external context the empirically relevant references mentioned above. Thus far, our analysis proceeded as follows: First, we developed a detailed case history employing all data sources using excel-sheets to depict the daily development over the analysed time frame of one month. Second, we consulted the literature of

organizational resilience and situated our focus in the processual concepts. The stage of coping with an adversity fit because at the time hospital staff expected the arrival of COVID-19 patients while pressured to adapt to this expected reality. At this stage, and third, daily interviews revealed that generating and implementing the response involved two different groups of actors : the authors of the response (involved in generating it) and the users of the response who were to implement it. This distinction helped to depict their respective processes and their inter-relation. Searching the literature, we have thus far not encountered corresponding empirical studies despite calls for addressing temporality in organizational resilience and to study in in situ (see Duchek, 2019; Williams et al., 2017). Fourth, we turned to the daily interviews to explored in-depth the user's process and identified two groups: those that adopted the authored guidelines and those who created their local responses. In a fifth step, we identified the effects of the different users' activities and the interaction of the authoring and using processes. These differences also revealed an ambiguity among the authors regarding the mask guidelines. A sixth step was guided by the goal to explain these differences. Using the observational transcripts and the meeting minutes of the two task forces, we searched for cues that provided reasons for their differences in respect to the guidelines. These reasons offered insights into the situation the authors found themselves in, namely a situation of uncertain evidence and external recommendation while having to provide an acceptable and robust guideline. Likewise, we depicted the situation of users mainly by relying on the daily interviews with a nurse and a medical doctor. Their accounts indicate the different situation of being directly exposed to the infection risk. These different situation in which authors and users find themselves in, provided the explanatory background as to why generating and implementing the guideline occurred in parallel and differed from one another. In comparison, the uncertainty of all these actors was similar and therefore did not help to explain the different process dynamics. Based on these insights, we developed a first process model for generating and implementing a response to an adversity as a process (Williams et al., 2017). This model is still geared closely to the empirical material but shows the different and interacting processes of coping with adversity. The model contains a recursive style of process theorizing (Cloutier & Langley, 2020).

Case: Uncertain situation unfolding dynamically

Background: The COVID-19 pandemic in Switzerland

Switzerland reported its first case of Covid-19 on February 25, and its first death in early March, when the virus had spread to several cantons. The spreading was fast, placing Switzerland second on the list of the rate of newly infected patients – Italy being on top – at the time. The federal office of public health (FOPH) declared an "extraordinary" situation on March 12, one day after the WHO called Corona a world-wide pandemic. The FOPH declaration shifted decision power to the federal level: Decisions included a national shut down on March 16, ordering hospitals to reduce all non-urgent medical activities and shift these resources to treating COVID-19 patients that were expected to push the healthcare system to its limits. These limits were reached in the cantons of Ticino (bordering Italy), Geneva and Vaud (bordering France) during March and lasted until the end of April 2020. Swissnoso, the federal association of hospital hygiene, stated on March 20 that "the number of cases is increasing rapidly, and the entire population is affected". Due to the spreading, the region of the hospital studied expected the wave of patients in early April: "The numbers rise now, and I think the wave starts" (Warren, virologist, daily interview April 2). However, this expectation did not come true. The curve of positive cases flattened during April, so that the country began exiting the shut down on April 27, a process that continues up to this date.

Setting: the hospital and the focus on the issue of masks

Our analysis covers March, the time as hospital staff expected the wave of patients and felt uncertainty. The studied hospital is a central hospital with 6'000 employees and 36'000 in- and 530'000 outpatient visits. During March, the hospital mobilized resources by reducing elective activities, prepared infrastructure (wards, ICU, ECR), revised clinic pathways for handling patient flows, established sites for testing and reallocated staff to areas in prospective need. To oversee these activities, hospital leadership established a Task Force (Ho-TaF) on March 12. Ho-TaF met twice a week for several hours and had 20 members including the main medical departments, nursing, pharmacy, hospital hygiene and administrative units.

Our case focuses on the handling of face masks. For one, masks are a core component of protection gear and exemplify the professionals' concern of protecting staff and patients from infection. In addition, the issue of face masks has triggered ongoing debate regarding protective effectiveness, locally within the hospital, nationally and internationally. In addition,

during the studied time frame, hospital members were uncertain of whether and how mask availability could be ensured over time. Therefore, the issue of masks exemplifies the larger adversity of COVID-19.

For handling the issue of masks, Ho-TaF delegated the development of guidelines for staff and patient protection to the department of Hospital Hygiene and its virologists. They formed their own daily taskforce (Viro-TaF). Ho-TaF declared Viro-TaF as the "pacemaker" who defines the conditions, sites and usage of masks in alignment with incoming information, rules and recommendations from federal levels (FOPH, and Swissnoso). Due to the task, we call Viro-TaF the *authors*. The authors defined the guideline and the rhythm of actions to accommodate to the unfolding situation. Viro-TaF developed the guideline during March and its final version occurred on April 2, 2020 that is still in use. These guidelines were to be implemented by clinics and departments. We call them *users*.

The guidelines on mask use illustrate the response the authors generated, and the users implemented to cope with the adversity of expected mask shortage, risk of infection, and contested protective effectiveness. We depict the dynamic of this process in the following section.

Observation: Two processes and their interaction

Over the course of generating and implementing the guidelines, we observed two distinct but inter-related processes of "authoring" and of "using" the guidelines, that associated with Viro-TaF and with the clinics that treated COVID and non-COVID patients, respectively. While both faced the same uncertainty, the two processes unfolded differently. We ascribe this difference to the respective situations, in which authors and users found themselves to act. The authoring process was paced in reference to the availability of masks and the external recommendations and rules. The using process was paced by immediate patient encounters and a risk of infection. The interaction between the two processes involved confusion, activities to align use to the authored guideline as well as adaptations of the guidelines until they stabilized as the enacted response to cope with the adversity.

The following model summarizes these results of our analysis:

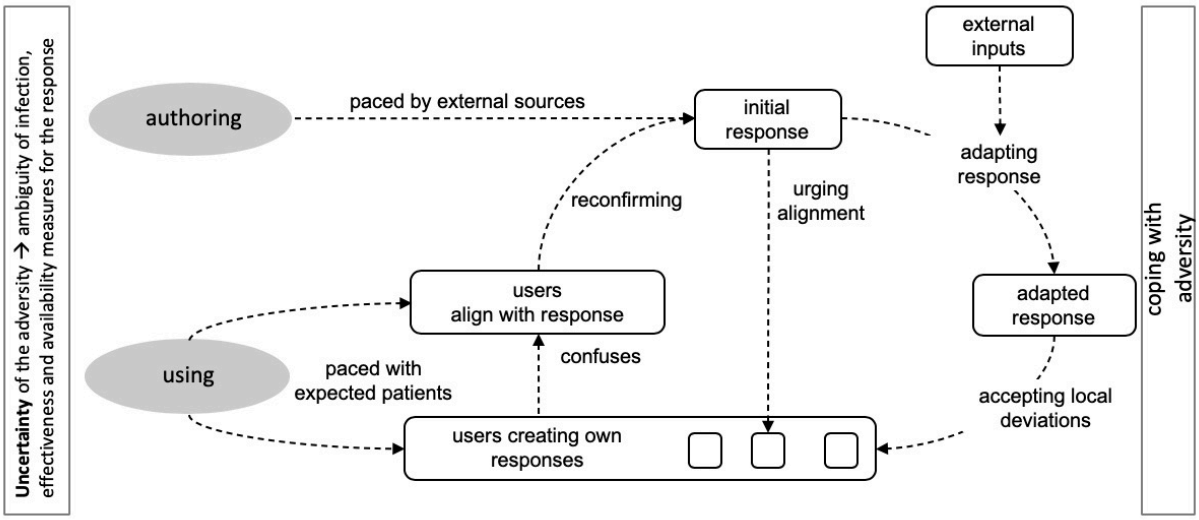

Figure 1: Model of depicting the process of generating (authoring) and implementing (using) a response to the adversity (mask use)

We will describe these results in following sections before discussing the empirical insights with the literature.

Shared uncertainty

The left rectangle displays the uncertainty both authors (Viro-TaF) and users (clinics and departments) faced during March. The uncertainty was mainly about issues related to the virus, its spread, infection, as well as diagnostic, therapeutic and protective measures like the masks: First, it was unclear to clinicians, if and what kind of effect masks would have on protecting patients and staff. Under known conditions, surgical masks are said to protect others. So-called FFP masks also protect the mask wearer, and clinicians use so-called FFP-2 masks with infectious diseases, for example. However, the specific possibilities of infection of the COVID-19 virus remained unclear. There was early consensus that the virus spreads with physical contact and drops. The issue of so-called aerosol infection – infection via tiny bits of air moisture - appeared ambiguous. Some claimed that the virus would survive long enough in the air while others suggested that the risk of an infection via aerosol was insignificant.

Besides, uncertainty also concerned the availability of masks. This uncertainty was due to the unknown number of infections and hospitalizations during March. In addition, it was unclear whether Switzerland would follow other countries – e.g. Austria, or Germany – on declaring a general use of face masks which would further limit their availability.

Authors (Viro-TaF) and users (clinics and departments) shared this uncertainty but acted differently. This marks the dynamic processes of authoring and using the guideline to the unfolding adversity of how to use masks.

Authoring process paced by uncertainty and external alignment

The authoring process (upper part of the model) was patterned in reference to scientific evidence and to federal recommendations by Swissnoso. Lacking the former, the head of Viro-TaF lamented in their meeting on March 18: "I wish we had an epidemiological line of argument." However, since March the number of scientific studies increased to an overwhelming number, both peer-reviewed and pre-published that overwhelm virologist and left them in doubt of their quality. During the daily interviews, Warren repeatedly complained that is was impossible to read all articles thoroughly and also criticized the unclear robustness of studies. If there were reliable scientific evidence, Viro-TaF could argue its guidelines and expected to enhance users' acceptance: "Right now, it is so difficult to communicate. How can we explain that we follow a different path?", said the head of Viro-TaF at the end of their discussion regarding the use of masks on March 18. At that point in time, Viro-TaF aimed for a selective use of masks by patients and HCW whereas the federal authorities appeared to recommend a general use. Besides a scepticism among parts of Viro-TaF on masks' effectiveness in protection, an important reason for a selective use was the uncertainty of mask availability. During the Viro-TaF meeting on March 18, the discussion on availability unfolded as follows: A: Do we have enough? – B: We do not know. – C: There are reserves, but nobody knows how many – D: We have ordered 100'000, so we do not really have a shortage. – B: But 100'000 will be gone on just 20 days." Likewise, mask availability was a topic of Ho-TaF. The head of logistics stated in its meeting of March 19 that they had received surgical masks from the canton, but Ho-TaF and other staff members asked: "How long will they last?" (Warren, daily interview March 19). While the availability for surgical masks improved by March 23, that of FFP2-masks remained limited until April 2. The situation appeared dire: "FFP 2 masks: zero in storage!" (meeting minutes, Viro-TaF, March 20).

Related to the lack of evidence and the uncertain mask availability, federal recommendations by Swissnoso suffered from a lack of consensus among its members – the heads of hospital hygiene of the Swiss hospitals. The head of Viro-TaF summarized his observation of the meeting as follows: "There is no consensus among them…" (March 18), a statement that had already entered their daily briefing document for all hospital staff on March 17.

In addition, the federal guidelines by Swissnoso shifted during March. One example is the use of FFP-2 masks for aerosol producing procedures: On March 5, Swissnoso highlighted the possibility of infection and urged clinicians to use of FFP 2 masks during these procedures. On March 20, Swissnoso changed to only recommend the use of FFP-2 masks, but now provided a list of aerosol producing procedures, while also differentiating between symptomatic and asymptomatic patients. For the latter, no FFP-2 masks were said to be necessary, even though some virologists argued that asymptomatic patients provided an infection risk (Warren, daily interviews, April 16). Swissnoso underlined its statement with a scientific reference to the New England Journal of Medicine that Swissnoso interpreted as follows: "If a transmission via aerosol is possible in clinical treatment, so only in a minority of cases". On April 7, Swissnoso adapted its statement by distinguishing the list of the aerosol producing procedures into two groups: one with medical evidence of infection risk and one with plausible infection risk.

Given these uncertainties, Viro-TaF, considered its guidelines for using surgical and FFP-2 masks completed on March 19 as he informed Ho-TaF: "This morning we developed the guideline, but it is not yet published. The FOPH recommends that all wear masks if in contact of less than 2 meters with patients who are at risk. If you think this through, all will have to wear a mask. Some hospitals do it like that, others do not. We do not do that but defined now that only for self-protection and when we have respiratory symptoms and are in contact with patients." The Ho-TaF first decided to publish it on that day but postponed the official declaration to await possible changes by the FOPH on that day. Thus, Ho-TaF took the decision on March 23, and announced it on March 27 summarizing the core as follows: "From March 26 onwards, all staff with patient contact wear a surgical mask" (minutes of Ho-TaF of March 27). As for FFP-2 masks, the guidelines stated that clinicians "can" use them during aerosol producing procedures. Despite this definition, Ho-TaF members still expected that FOPH could issue a general mask use shortly thereafter while they favoured a selective use only for staff in patient contact to wear masks.

In summary, the authoring process of the guidelines for using surgical and FFP-2 masks was subject to the uncertainty regarding the spread of the virus and the resulting infection risk; the unknown availability of masks; as well as uncertain (FOPH) and shifting (Swissnoso) recommendations by federal authorities. Nevertheless, Ho-TaF and Viro-TaF aimed for and developed an authored response that was clear and consistent to be widely used by hospital staff.

Users process paced by uncertainty and the immediate patient encounter

The process of using was paced by the situation of clinicians, nurses, cleaning staff and others who were in contact with patients. The directly exposed staff members faced an immediate possibility of infecting themselves or others. Warren (daily interview, May 25) explained using the example of the clinic of pneumology: "The difference with us in hospital hygiene is that a clinician in pneumology has a patient in front of them with symptoms that could indicate a positive case. They get frustrated with the delay and unreliability in tests, and the lack of therapies. And they are worried about their staff. If they lose them, they can shut down the clinic." This situation of immediate exposure to one's own risk of infection and that of patients paced the process of mask use. The use of masks further differentiated into two sets of activities. Some users aimed to align their activities with the authored response, while others created their own responses on the use of masks.

The first group associated with departments like nursing that aimed to follow the emerging guidelines and the role of Viro-TaF as pacemaker. For nurses, their superior observed them as "calm and professional" in general as they prepared for the expected wave of patients (Rachel, daily interview, March 18). According to her, "as long as the hospital is clear in its message and that it says Hospital Hygiene is the pacemaker, we can do it.". In this manner, nurses aimed to orient towards task forces' decisions over time and adapted to proposed changes.

A second group of users developed local responses for their clinics. The clinic heads required all of their staff to wear masks, irrespective of whether in contact with patients or not – a clear deviation from the authored response that only required those in direct patient contact to wear masks. Some clinics – e.g. Oncology and Cardiology – announced (March 18) that all their patients were at high risk, therefore masks were mandatory for all staff. Other clinics – e.g. that of pneumology (March 20), of throat, mouth and nose (March 24); gastroenterology (March 26); rheumatology (March 27) – issued their own protection gear and guidelines to avoid infection of staff and patients. These clinics argued with the risk of aerosol producing procedures mentioned above. As an example, Rachel reported on March 26: "He (head of gastroenterology) ordered his own masks, and special goggles and exercised today with the whole team. He told them that they have to wear full-body protection with all patients and practiced the endoscopy procedures (an aerosol producing one) in full gear … That is sick. But it is normal that people like him do not trust the decisions of Hospital Hygiene and the

Task Force. … I told my team – and the clinic probably hates me for it – that we follow the guidelines."

Confusion results from local responses for those aligning with authored response

As a result of different mask usage, confusion arose. The head of Viro-TaF observed on March 18: "We observe ourselves in our clinic and in the hospital that some staff wear masks and others don't." Likewise, Ho-TaF members noted that "the use of masks is unclear," asking Viro-TaF to revise and specify its guidelines so that hospital staff would be clear on when, where and which masks to use. The confusion continued as the head of Viro-TaF noted during the meeting: "Right now, it is like a wish plan. Every clinic does what it wants." The confusion continued to be noted until the end of the month (minutes Ho-TaF, March 27).

Ambiguity was also present within the Viro-TaF: Some members argued that the risk of aerosol producing procedures to be insignificant (March 5, hospital staff briefing), while others acknowledged the possibility of infection and recommended FFP-2 masks (Warren, daily interview, March 19). A similar divide occurred regarding the general use of surgical masks. Some argued that there was no evidence of the benefit and due to limited availability, masked should be used only if necessary, i.e. when in direct contact with patients. The other group argued that masks would assist in protecting others from infection and that the lack of robust evidence would not imply that masks would have a protective effect (Warren, daily interview, March 19). The divide was also visible during the Viro-TaF meeting: some participants wore masks continuously and sat physically distanced from the rest. The others sat side-by-side around the table without masks.

In addition, confusion reached those users who aligned with the authored response: For nurses, Rachel noted: "some say we need protection like masks and others say we do not." In the course over the next days, nurses became increasingly sensible towards masks observing closely whether clinicians wore a surgical mask – said to protect others – or FFP-2 masks to protect themselves (daily interview, March 19). On March 23, the confusion among nurses jeopardized their initial sense of preparedness stated Rachel (daily interview): "This is my biggest worry right now. How do we handle surgical masks? My staff asks so many questions and I try to keep them calm by saying that we will discuss it in the Task Force on Monday. But up to now, we have nothing that is smart (in terms of the guidelines). The statement that

they “can” use masks creates questions and uncertainty among nurses on when and where to use surgical masks. […] That they can use masks does not help my staff.”

Process interactions to reduce confusion and to arrive at a practiced response

The confusion among users triggered the interaction of the authoring and the using processes in two ways, aligning activities to the response and adapting the response to the activities.

Aligning activities to the authored response

Reacting to the confusion, one reaction was ensuring alignment with the response. Such alignment took different forms: First, users, like nursing, who accepted the Viro-TaF as pacemaker reacted to the confusion through inquiries with their superior who turned to Viro-TaF for reconfirmation. Reconfirmation clarified the use of masks, but with a remaining ambiguity. While Rachel (March 24) for example appreciated that Hospital Hygiene trained nursing staff on the use of masks, different members appeared to provide different information. “And then my people call me and say ‘but she has said something different…’ then I need to remind them that we follow the official guidelines of Hospital Hygiene. … Also, a Hospital Hygiene member told my staff that they expect that masks become mandatory, so they should start using them. And I have then to say: No, the Task Force still needs to decide that (and for the moment, only those in direct patient contact have to wear them).”

Second, during encounters with deviating clinics, nursing argued for Viro-TaF as the pacemakers and to align with their authored guidelines. For example, Rachel reports on March 27 her visit informing a staff member that she did not have to wear a mask because of the glass protection. The clinic head entered and they engaged in a heated discussion. He wanted the staff member to wear the mask. Rachel: “And then I told him that the Task Force and Hospital Hygiene decide that. … And I saw her (the staff member) becoming worried, and he just lamented about Hospital Hygiene and the Task Force, got quite annoyed and just left. … And when I left, I saw him returning, and guess what, he told her that she has to wear the mask again.”

Third, aligning activities to the guidelines involved the Viro-TaF and the CEO. The former had bilateral conversations with the different clinics urging (Rachel, March 26) to comply with the emerging rules. Besides, the clinic heads that deviated from the authored response were called to bilateral meetings with the hospital CEO. While the details of these meetings remained unknown, the CEO announced their occurrence in the Ho-TaF over the weeks from

March 19 until the end of the month. In a daily interview, Warren (May 25) reported a conversation with a clinic member of gastroenterology whose head had been called in: “They are really worried about the patients and their colleagues, and then the head has to go to the CEO and explain himself for that. I find this so inappropriate to call him in, when they are just worried about their patients and their staff.”

Adapting the authored response

The second set of reactions was to adapt the guidelines: For the general use of masks, Viro-TaF published their minutes on March 23, that stated that there would not be a “coercion” of mask use, but employees could use them if they deemed necessary. Viro-TaF and Ho-TaF decided for March 27 that all staff in patient contact had to wear masks, while other staff were offered masks if necessary, as stated before and re-stated on April 2.

In the case of local responses Viro-TaF also adapted the guideline loosely following the emerging recommendations of Swissnoso. Initially, Viro-TaF informed all staff on March 12 that aerosol producing procedures “are insignificant in terms of infection risk”. During a discussion, the head of Viro-TaF stated on March 18, that there were studies emerging on both sides, but: “At the end, the aerosol does not play an important part in spreading the virus, it is not relevant. I think Swissnoso will make a statement on this soon.” On March 30, the issue was taken up again in the Viro-TaF and decided to adapt the guidelines according to the qualified Swissnoso list of aerosol producing procedures. On April 2, Viro-TaF decides that FFP-2 were to be used for the procedures with evidence and could be used with the others. Thereby, Viro-TaF adapted its guidelines to acknowledge the local responses of the different clinics although undermining the initial goal of a “simple, clear guideline” (Hospital CEO, Ho-TF meeting, March 19).

Summary

The above narrative depicts temporally unfolding events of generating – the authoring process - and implementing – the using process - a response (the guideline) to an unfolding adversity (using masks). While hospital staff members encountered the same uncertainty, the authoring process was paced in reference to the availability of masks and the external recommendations. The process of using the masks geared towards the direct exposure to patients and thereby the immediate risk of infection. While one group of users followed the authored response, other users deduced fast and localized responses to handle a possible infection. The resulting confusion over the use of masks triggered activities to align mask use to the guideline as well as

to adapt the guideline to accommodate local concerns. This interaction between the authoring and using process led the hospital to arrive at an official and implemented guideline on April 2. This guideline is still in effect and allowed coping with the adversity.

Discussion

The following discussion concerns the two open issues to further elaborate on the combination of sensemaking and acting when coping with an unfolding adversity. While literature highlights that responses should be "widely accepted and adopted" (Duchek, 2019, p. 15), this aim is challenging. Known hurdles include personal interests (Baumard & Starbuck, 2005; Cannon & Edmondson, 2001), power games (Barton & Sutcliffe, 2009; Edmondson, 2004) or multiple institutional logics (Greenwood et al., 2011; Kahn et al., 2018). Our process study adds that the difficulties result from the unfolding process of coping with adversity. First, generating and implementing a response occur simultaneously when coping with adversity (Duchek, 2019). Second, these are different sub-processes of coping that involve different actors, who find themselves in different situations. These two insights from our case address the identified open issues regarding how resilience works *in situ.*

Process is not sequential but parallel

Our study shows a combination of sensemaking and acting, in which both unfold simultaneously. A main reason is the adversity unfolding as a process in the case of a pandemic. It is not a single event, like an earthquake. Along-side the adversity as process uncertainty unfolds with ongoing activities to work through it over time.

Our findings speak to recent processual conceptualizations of organizational resilience. These emphasize the stages, of anticipation, coping and adapting (Duchek, 2019), or anticipating, preparing for and responding to adversity (Williams et al., 2017). Although sequential, the different "resilience stages show some overlaps and strongly depend on each other" (Duchek, 2019, p. 8). Our findings advance this note of caution during the coping stage by showing empirically that generating and implementing responses occur simultaneously with an unfolding adversity. Thus, sensemaking and acting take place in parallel.

In comparison, Duchek (2019) argues that a response is first generated, then implemented, and adapted through feedback. Such a combination of sensemaking and acting suits an adversity as an event. However, when an adversity and its associated uncertainty unfolds over time,

actors continuously make sense and act upon the adversity simultaneously. Generating a collectively shared and comprehensive understanding becomes near impossible to achieve in crisis conditions which are fast-moving and highly uncertain (Maitlis & Sonenshein, 2010). The organization has to act with incomplete information (Christianson & Sutcliffe, 2009; Maitlis & Christianson, 2014) and as the crisis unfolds (Barton & Sutcliffe, 2009). Particularly for adversities as process, we suggest that generating and implementing occur in parallel rather than in a sequence.

Process dynamic due to different actors and the situation they find themselves in

Our study moves beyond coping as a single process by showing two different processes when an organization engages with an unfolding adversity. In our case, these were the processes of authors creating the response and the process of using the response. While these processes may merge into one when studying resilience with individuals and groups (Barton & Sutcliffe, 2009; Baumard & Starbuck, 2005; Cannon & Edmondson, 2001; Weick, 1993), they differentiate in an organizational setting so that Kahn et al. (Kahn et al., 2018) conclude that organizational resilience is not one synchronized process.

Considering the different sub-processes helps to explain the observed dynamic when coping with an adversity: In our case, authors awaited further insights by federal authorities and additional evidence from science. Users aimed for immediate action in order to protect patients and staff. The two processes interacted in that some users used their own responses which resulted in partial confusion, further need of clarifications and an adaptation of the guideline that fostered coping with the adversity.

The reasons for the different processes and their dynamic interacting is that the actors of each sub-process found themselves in a different situation. They generated different understandings and actions, while following the assumption by Duchek (2019, p. 14) that "only if people understand the crisis situation are they able to act on it." In our case, the authors found themselves in a situation to develop a consistent, coordinated and robust response. Such an aim is important to enable consistent and aligned action (Carroll, 1998) which is particularly relevant in a pluralistic setting, in which leadership requires the consent of the led (Denis et al., 2001). The users, in comparison, found themselves in their specific work settings of engaging with patients so that they directly faced the infection risk for staff and patients. This understanding required situative and timely action. Due to their differences, each sub-process entailed a different pace and trajectory, which resulted in partial confusion and guideline adaptation

throughout their interaction. These insights from our case contributes a processual explanation to the known challenges and reasons why achieving resilience is challenging.

Concluding remarks

In this study, we build on a processual understanding of organizational resilience. We followed calls to address the inner workings of organizational resilience when coping with adversity unfolding over time. First, we argued to better understand the temporal dynamic involved in the combination of sensemaking and acting as a central part of coping. Second, we explored the implicit assumption that actors generating and implementing a response are identical. We asked how an organization with different actors copes with adversity that unfolds over time. Our case study of a hospital coping with the unfolding Covid-19 pandemic generated two findings. First, we suggest that sensemaking and acting occur in parallel. Second, we find that the two different processes of generating and implementing the response were paced differently due to the respective situations in which involved actors find themselves in. These insights contribute to an understanding of the inner workings of resilience and why achieving resilience is challenging for organisations.

At this early stage, the paper contains the methodological limitation of not yet including systematically the perspective of the different user groups. Conceptually, the proposed model still feels to be geared closely to the empirical case and requires further theorizing to carve out more precisely its conceptual contribution. Nevertheless, we believe that our insights may provide inspiration to other researchers and to practitioners by directing the attention to the different actor situations, the unfolding processes and their interaction that shape the generation of a response to cope with an adversity. One way forward for our and other studies is to engage more deeply with temporality in resilience and the idiosyncratic events that also shape the trajectory of processes over time. Another way forward in coping and in the other stages of organizational resilience is to further attend to the interaction between processes, the entanglement moves beyond organizational boundaries.

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