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Exploring the dynamics of slack in extreme contexts: A practice-based view

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Abstract

Organizations that operate in extreme contexts have to develop resilience to ensure the reliability of their operations. While the organizational literature underlines the crucial role of slack when facing unanticipated events, a structural approach to slack says little about the concrete ways in which organizational actors produce and use this slack. Adopting a practice-based perspective during a 14-month ethnographic study in a French critical care unit, we study the slack practices, which consist in gathering, arranging and rearranging resources from both inside and outside the medical unit. This permanent process is captured in a dynamic model connecting situations, their evolutions and slack practices. Our research highlights the importance of situational slack production practices to ensure resilience. We also argue that these micro-practices are constitutive of the context in which actors are evolving. Finally, we discuss why these slack practices, although essential for ensuring resilience, can be endangered by the New Public Management context.

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Introduction

Extreme contexts create unique contingencies, constraints and causation (Hällgren et al., 2018; Hannah et al., 2009). How organizations confront these contexts to ensure reliability and resilience has become a hot topic in a world impacted by environmental, technological and social disruptions.¹ Over the last thirty years, the academic literature has explored numerous practices and mechanisms that lead to resilience in groups or organizations, particularly in the context of high reliability organizations (HRO) or at times of crisis (e.g. Bourrier, 2005; Powley, 2009; Roberts et al., 2004; Sutcliffe and Vogus, 2003). Thus, the resilient organization has to design technological and human systems that are able to deal with shocks and to manage critical situations as quickly as possible once deviations emerge (Vogus and Sutcliffe, 2007).

This article focuses specifically on the role of slack in managing extreme contexts and ensuring resilience. Slack can be defined as ‘the potentially utilizable resources that can be diverted or redeployed for the achievement of organizational goals’ (George, 2005: 661). In extreme contexts, slack can prevent negative situations or can help to manage adverse situations when negative events have occurred (e.g. Bourgeois, 1981; Meyer, 1982; Perrow, 1984; Schulman, 1993; Sutcliffe and Vogus, 2003). Slack is therefore ‘one possible explanation for organizational resilience’ (Vogus and Sutcliffe, 2007: 3420). However, while slack is often evoked at the organizational and structural levels as an important mechanism for ensuring resilience and consequently reliability, few studies focus on the micro-level to capture slack in action (Daniel et al., 2004), especially during extreme events. Hence, our research question in this article is: “How does slack contribute to resilience in extreme contexts?”. For this purpose, we adopt a practice perspective, in which the site or the situation

¹ This article originates from a PhD thesis begun years before the Covid-19 pandemic.

is a nexus of material arrangements and human practices, to study slack in action. We focus particularly on the resources implied, produced and used² by actors to perform their activities as the material underpinnings of practices are of prime importance (Feldman and Worline, 2011; Nicolini, 2009; Schakel et al., 2016).

Carrying out a 14-month ethnographic empirical study in a French Critical Care Unit (CCU), we reveal what we refer to as ‘slack practices’, i.e. the practices that are employed to produce and use excess resources when operating in risky and emergency contexts. These contexts refer, respectively, to situations which potentially or actually endanger the core activity of an organization (Hällgren et al., 2018). From our empirical study, we develop a model connecting risky and emergency contexts with the micro-dynamics of the production and use of slack by actors according to the situation. When the context is risky, the slack accumulated in the unit is sufficient to maintain resilience. However, the context can shift to one of emergency and may require the production of situational slack to cope with unexpected use. Beyond depicting these general dynamics, the main contributions of our study are threefold. First, our research highlights the situational slack production practices and the importance of absorbed slack for a HRO to ensure reliability. Second, the micro-practices not only depend on contexts but are also constitutive of these contexts, underlining the theoretical flaw of reifying the concept of context. Finally, we point out the invisibility of these practices at the organizational level and the unfolding danger of the New Public Management context, which primarily targets cost efficiency.

² We opt for the word ‘use’ and not ‘consumption’ as for us ‘consumption’ denotes actors having a passive role. ‘Use’ – as the resourcing view claims – refers to a creative human activity.

The role of slack in extreme contexts

Slack was initially defined as ‘[The] difference between total resources and total necessary payments [...]. Slack consists in payments to members of the coalition in excess of what is required to maintain the organization’ (Cyert and March, 1963: 36). In other words, slack is the difference between the resources available to the organization and the combination of demands for these resources (Bourgeois and Singh, 1983: 45). Bourgeois (1981) extended the concept of slack to the capacity of an organization to adapt to its environment. He defined it as ‘[...] that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment’ (Bourgeois, 1981: 30). This slack comprises different types of excess resources – e.g. a surplus of finance, personnel, supplies or material – which are available or made available, and which can be combined over time in an organization (Marlin and Geiger, 2015; Paeleman and Vanacker, 2015). For instance, in manufacturing operations, firms can meet unexpected variations in demand by selecting from different resource options to obtain volume flexibility with minimal disruption (Jack and Raturi, 2002, 2003).

These surplus resources have two distinct organizational roles. They promote change and innovation by loosening internal controls and creating funds that can be directed to projects with uncertain outcomes (George, 2005; Herold et al., 2006; Nohria and Gulati, 1996, 1997; Singh, 1986; Slappendel, 1996; Zajac et al., 1991), or they can prevent disruption by absorbing internal or external shocks (Meyer, 1982; Pfeffer and Salancik, 1978; Schulman, 1993; Sgourev and van Lent, 2017). This latter role is particularly important in extreme contexts characterized by the conjunction of potential or actual events that may disrupt organizational routines and have intolerable consequences. Based on the definition of extreme contexts by Hannah et al. (2009), Hällgren et al. (2018) distinguish risky contexts,

characterized by events that might occur and affect the core activity of an organization (potential disruption), from emergency contexts, where disrupting events actually occur.³ In these contexts, slack resources can absorb shocks by preventing or by recovering from the occurrence of events, i.e. by being resilient by maintaining a positive adjustment under challenging conditions (Sutcliffe and Vogus, 2003: 95). The normal accident theory (NAT) (Perrow, 1984) and HRO literatures offer typical examples of how organizations facing potential dramatic risks use slack to prevent the occurrence of catastrophic events, as their failure could have disastrous consequences (Casler, 2014; Roberts, 1990; Roberts et al., 2004). For instance, studying the Diablo Canyon nuclear power plant, Schulman (1993) observed that in addition to slack in resources – constituted by redundancy of equipment, supplies or personnel relative to current demand – conceptual slack, i.e. producing potentially divergent interpretations, was also important for ensuring reliability.

While slack can prevent the occurrence of disrupting or adverse events through an anticipatory approach, it can also absorb shocks when disrupting events occur, i.e. when the extreme context becomes one of emergency (Hällgren et al., 2018). For instance, studying an unexpected doctors' strike in San Francisco's hospitals, Meyer (1982) observed that jolts had a variety of impacts and were partly influenced by the hospitals' levels of slack. Some hospitals absorbed the strike by opting to deplete their financial reserves, while others laid off employees. Depending on their strategies and ideologies, surplus financial reserves or human slack resources helped to absorb the effects of the strike.

Although slack can be considered as critical for ensuring the resilience of organizations – either by preventing dramatic events or by managing them once they occur – the literature

³ While Hällgren et al. (2018) envisaged a third category – the disruptive context – disconnected from the core activity of an organization, we do not discuss it within the scope of this article.

only provides a general view about its relationship with resilience. How organizations produce and use slack before and during unforeseen events remains largely unexplored (Vogus and Sutcliffe, 2007). With the exception of Schulman's (1993) detailed study about redundancy, few works explain how slack intervenes concretely in the resilience process whereas 'it is not merely the stocks of resources that determine resilience, but also the deployment of the resources that exist' (Vogus and Sutcliffe, 2007: 3421). As we explain below, we chose to study how slack participates in resilience in extreme contexts through the practice theoretical lens, as suggested by Hällgren et al. (2018: 144–145).

A practice perspective on slack

A small group of studies on slack suggest that slack resources are managed intentionally by individuals and organizations to achieve their goals and, eventually, to ensure resilience. They show that: surplus personnel can be used to offset the adverse effects of unskilled labor (Sgourev and van Lent, 2017); excess production capacity enables organizations to be flexible without incurring significant penalties (Jack and Raturi, 2002, 2003); excess sales can be managed to create a 'sales surprise' to improve the valuation of firms by investors (Manikas and Patel, 2016); and managers can create slack in the budgeting process by negotiating achievable targets (Merchant, 1985). Although these studies do not refer to extreme contexts, they illustrate the agency of individuals both in the production and use of slack resources to achieve individual or organizational purposes. However, due to their methodology, empirical groundings and theoretical approach, these studies do not examine the production and use of slack as processes in the making and in situ, as the practice perspective would require (Schakel et al., 2016: 392). Similarly, the NAT (e.g. Perrow, 1984) and HRO literatures (e.g. Schulman, 1993) remain at the structural and organizational levels of analysis (Barton and Sutcliffe, 2009). They emphasize the 'being' – stock of resources, loose coupling structures or redundancy of functions – rather than the 'becoming' (Hernes,

2008), ignoring issues of time, process, uniqueness or context (Tsoukas, 2017). Moreover, these studies postulate that resources have innate features and qualities, while authors such as Feldman (2004) and Feldman and Worline (2011) claim that resources are always creatively connected to practices in organizations and are potential resources until somebody uses them (Feldman and Orlikowski, 2011: 1246). For these authors, 'resourcing theory points to a definition of resources focusing on how organizational members take up and use assets as they pursue activities in line with what they wish to make happen in the world' (Feldman and Worline, 2011: 630).

For these reasons, we study slack in situ by adopting a practice perspective. Despite its numerous and diverse philosophical roots and voices (Reckwitz, 2002; Schatzki, 2001, 2005), practice research shares common characteristics and converges around several crucial points about social life in general and organizational life in particular (Feldman and Orlikowski, 2011; Feldman and Worline, 2016; Gherardi, 2012; Nicolini, 2013; Nicolini and Monteiro, 2017; Sandberg and Dall'Alba, 2009). Practice researchers share 'site ontologies', taking practice as a unit of analysis and as the fundamental building block of social reality, studying ordinary actions and rejecting traditional dualisms or disjunctions (Tsoukas, 2017) between structure and actors (Schatzki, 2001, 2005), human and non-human, or actions guided first by interest (*homo oeconomicus*) or by norms (*homo sociologicus*) (Reckwitz, 2002).

Practices produce the organizational reality and phenomena through their interconnection (Feldman and Orlikowski, 2011). For this research, we focus on the human interactions with resources in work activities and take a situational approach which addresses the local accomplishment and reproduction of practices (Nicolini and Monteiro, 2017: 121). Viewing slack from this practice perspective has several consequences and suggests a number of differences from the current literature on slack.

First, as ‘practice is understood as something that people do in “real” or everyday life’ (Miettinen et al., 2009: 1312), we depart from the slack literature which has traditionally searched for acontextual stable relationships between slack and other phenomena such as innovation, bankruptcy, risk-taking, absorption of critical events and so on at the organizational level. The practice perspective considers the mundane activities in working situations to be important, taking a micro-view of the production and use of slack. To our knowledge, only Sgourev and van Lent (2017: 1294) have developed the view of slack as a human resource management practice which consists in using extra human resources to compensate for skill shortages in carrying out organizational processes. However, we stray from their focus by considering simultaneously the use and production of situational slack during action.

Second, despite their repetitive dimension, practices enable the creativity and change required to adapt and act in constantly changing circumstances (Orlikowski, 1996; Tsoukas and Chia, 2002). As argued by Nicolini and Monteiro (2017: 114) ‘performing a practice always requires adapting to new circumstances, as its accomplishment is neither mindless repetition nor complete invention’. This is especially important in extreme contexts where situations can evolve rapidly and unexpectedly. For instance, Faraj and Xiao (2006) observed new practices, such as epistemic contestation, joint sensemaking and cross-boundary intervention, in a trauma center when a patient’s reaction to treatment deviated from the plans and their health was at immediate risk. This conjunction of routines, change and novelty in situated actions emerges from the dynamic of different interactions (Gherardi, 2012). Consequently, the concept of site invites us to unpack the familiar idea that context matters (Nicolini, 2011) when observing the ‘world in the making’ in a simultaneously creative and routinized way.

Third, the ontology of the practice-based approach considers entwinement or entanglement as the basic form of being in the world (Hernes, 2008; Sandberg and Dall’Alba, 2009),

underlining the radical inseparability of humans and the socio-material world they live in (Sandberg and Tsoukas, 2011: 343). While practices are considered in situ, they consequently bring to the fore the material and technological entanglement in practice to perform activities based on a relational ontology (Feldman and Worline, 2011; Hernes, 2008; Orlikowski, 2010; Schakel et al., 2016). This invites the researcher to pay attention to mundane objects, technologies and resources that are processed or ‘how they [resources] are brought into use’ (Feldman and Worline, 2011: 631).

Finally, practice research studies organizations less as entities and more as entangled social processes for organizing, i.e. open-ended and pervasive processes of organizing and changing through permanent enactment and mutual constitution (Feldman and Orlikowski, 2011; Feldman and Worline, 2011; Hernes, 2008; Tsoukas and Chia, 2002). As social ordering structures emerge from situated (inter)actions and relationships, ‘practice approaches are fundamentally processual and tend to see the world as an ongoing routinized and recurrent accomplishment’ (Nicolini, 2013: 3). Thus, instead of considering slack as a fixed stock of surplus resources, the practice view invites us to consider slack practices as processes that unfold over time. Because the elements of a practice are not fixed and ‘follow a trajectory of becoming’ (Gherardi, 2012; Tsoukas and Chia, 2002), a processual view can illuminate the mechanisms that connect slack and resilience (Vogus and Sutcliffe, 2007). This processual approach requires a qualitative commitment to produce processual, fine-grained observations to understand the practices as they happen in the workplace (Gherardi, 2012; Nicolini, 2013).

Methods

Description of the Critical Care Unit

Extreme-context research includes a variety of environments, such as emergency or critical care units in the healthcare sector, where the activity contains risk – actual or potential – for

individuals, teams or organizations (e.g. Faraj and Xiao, 2006; Roberts et al., 2005; Tamuz and Thomas, 2006). Our fieldwork takes place in a CCU linked to the Emergency Center of a French university hospital – one of the biggest in the country. The CCU is only one component of the hospital's Emergency Center, which is composed of several other medical units such as the Emergency Department and Pediatric Emergency Department. Inside the Emergency Center, the CCU looks after patients with critical conditions such as cardiopulmonary arrest, poly-traumatic injuries and strokes. With an average of one patient dying in the CCU every two days, death is inherent in the activity of this type of medical unit and the severity of the cases handled. However, given the severity of the medical cases admitted to the unit, the death of a patient is not necessarily the consequence of a failure in organizational resilience.

The CCU has three missions: handling vital emergencies, post-surgery monitoring and intensive care management. Its general mission is to treat patients with life-threatening conditions, i.e. *'when your organs are no longer capable of maintaining a sufficient level of vital functions'* (Head of the CCU interview). The unit therefore has to manage patients in a medical emergency situation regardless of the available capacity, maintaining their vital functions until a medical specialty (traumatology, cardiology, neurosurgery, etc.) can treat them: *'That's why the CCU and the operating rooms are connected. Anyway, we are not the ones who will heal them; we are the ones who enable them to live until they are fixed'* (Physician interview).

The same number of staff works in the CCU night and day, on normal working days and holidays. The staff includes nurses, assistant nurses, doctors and interns who specialize in intensive care anesthesiology. Taking account of leave and sickness days, there is a total staff of 40, who are organized into shifts to ensure a continuous service. Among this staff, the anesthesiology interns are unique as they are trainees and are assigned to the department for

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2
3 six months. Overall, there are one doctor, one intern, four nurses and four assistant nurses 24
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5 hours a day in the CCU.
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8 The CCU has three areas of activity. First, the Trauma Room (TR) (4 beds) is where patients
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10 with critical life-threatening conditions and injuries are assessed to stabilize them. This
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12 involves initial medical examination, clinical evaluation monitoring, etc. The other two areas
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14 (the Intensive Care Unit (ICU) and Post-Operation Recovery Room (PORR)) are both
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16 spatially connected to the TR. The ICU (8 beds) is responsible for patients whose conditions
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18 are too unstable to allow them to be transferred to a specialist unit while they require close
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20 monitoring. The PORR (6 beds) is dedicated to the Emergency Center's operating rooms and
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22 monitors patients after surgery. The nurses and assistant nurses are allocated to these different
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24 areas: one nurse and one assistant nurse work in the TR, two nurses and two assistant nurses
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26 work in the ICU, and one nurse and one assistant nurse work in the PORR. The doctors
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28 oversee both the CCU and the anesthetic function of the emergency operating rooms.
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33 The CCU has two essential characteristics. First, like other emergency units in the
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35 Emergency Center, it is an entry point for unplanned patients. It admits around 3,000 patients
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37 per year who stay in the unit for a period ranging from a few minutes (for example if the
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39 patient is under surveillance before surgery) to 72 hours.⁴ The unit accommodates up to 15
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41 patients per day. Similarly, there is an extremely high variance in the severity of cases,
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43 ranging from simple fractures to serious poly-trauma, and in the pathologies (neurosurgical,
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45 visceral, cardiac, etc.). Patients may also have sustained injuries or have become injured as a
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47 result of a wide range of circumstances, such as a car accident, a fall from a roof, gunshot
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49 wounds, as well as aneurysms, strokes and post-surgical complications. Second, the activity
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54 ⁴ Administrative rules state that this type of ICU cannot hold a patient for more than 72 hours.
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56 After 72 hours, the patient must have access to a bed in another ward (or another hospital) or
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58 be able to leave the hospital.
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takes place in a highly technological environment to deal with life-threatening events. This makes the CCU similar to a HRO (e.g. Madsen et al., 2006; Roberts et al., 2005), as it regularly has to manage unanticipated events with potentially dramatic consequences in a complex technological and organizational environment. Indeed, the CCU's operations require access to numerous and diverse technical resources both inside the unit (monitoring devices, life-support systems, specific technical devices, computers) and outside the unit. The latter resources (CT scanner, MRI scanner, X-ray, blood bank, etc.) are shared within the entire Emergency Center. They enable the CCU to be designated as a 'trauma center', i.e. an organization that can manage the whole trauma without transferring the patient to a specialist unit. The other resources required for care – whether technical or human – are available within the hospital and can be forwarded to the unit when necessary. These resources come to the patients rather than the patients going to the resources.

Ethnographic approach and data collection

As work should be understood as a 'situated activity' (Gherardi, 2012), we employ a specific piece of ethnographic fieldwork to capture the medical view from inside and 'the materially mediated doings and sayings ("practices")' (Nicolini and Monteiro, 2017). Several extreme-context research studies have conducted ethnography to capture complex and unpredictable activities (Bechky and Okhuysen, 2011; De Rond and Lok, 2016; Faraj and Xiao, 2006; Schakel et al., 2016). Indeed, the ethnographic approach enables the researcher to report on practices 'in the making' (Hernes, 2008) and, in our case, to study how slack contributes to organizational resilience in a medical unit (Dixon-Woods et al., 2012; Leslie et al., 2014).

Our fieldwork took the form of a 14-month ethnographic study conducted by one of the authors in a CCU where, as well as collecting data, the researcher lived with the group and was immersed in its everyday life as an 'active member' of the unit (Adler and Adler, 1987). He was acknowledged as a management researcher (with his own research agenda) and, at

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the same time, helped the team to take care of patients. Given his lack of medical skills, his participation consisted in doing the ‘grunt work’ (Barley, 1990: 238), such as carrying patients on stretchers, helping with administrative tasks or fixing computer problems. As a researcher, he collaborated scientifically to better understand the operations of the unit to improve patient safety.⁵

Our ethnographic approach is based on the rigorous observation of a small group of people (the medical team) with whom we had personal interactions (Cunliffe, 2010). To understand the people’s work ‘from the native’s point of view’ (Miettinen et al., 2009), we explore situated understandings of managerial practices, how they are accomplished in particular places and times, and how they are brought together and/or made distinct from other activities, before considering and theorizing their possible effects (Korica et al., 2017). Our methodology combined participant observation and semi-structured and informal interviews during the observation period with the collection of secondary data (such as activity reports and procedure guidelines) to refine and validate our abductive analysis (Figure 1). These sources enabled us to retrace the life of the unit, its repeated practices in habitual situations, exercise of human agency and ‘daily doings’ (Korica et al., 2017).

<Insert Figure 1 about here>

Observation methods require a specific approach for making rigorous observation (Barley, 1990) and ‘choosing different angles for observation’ (Nicolini, 2009: 1398). As a CCU’s activity can be characterized by unpredictability, time pressure and sudden changes,

⁵ For instance, this collaboration led to the presentation at the French Society of Anesthesia & Intensive Care Medicine Annual Meeting in 2016 of a co-authored paper which highlighted the contribution of HRO principles to improving patient safety.

observation should therefore include unplanned activity, density of actions in a short amount of time, multiple spaces used for the same patient and the team's movements between these spaces. Hence, the specificities of the CCU required a fixed, systematic and mobile system to monitor a situation or to follow an actor. Based on the characteristics of the activity and the observation approach developed by Journé (2005, 2012), we adopted an observation strategy combining four different tactics according to spatial and temporal variables (Table 1). This strategy enables us to capture the resilience of the unit, defined here as being successful in handling the flow of patients whatever their number and the severity of cases. Indeed, as Weick and Sutcliffe (2007: 40) recalled ' [...] there are constant outcomes and nothing to watch. That does not mean that nothing is happening'.

<Insert Table 1 about here>

To meet the need for in-depth analysis, we validated our results using three strategies. First, our study involved team work where one researcher (*the insider*) debriefed the other (*the outsider*). Working in tandem has two main advantages: it validates the interpretations from two different viewpoints and avoids being too close to the ethnographic fieldwork – especially the emotional part of working in a CCU – in order to keep an analytical distance (Adler and Adler, 2012). Second, we used data triangulation (Eisenhardt, 1989) to ensure the validity of our findings. Beyond the fieldnotes, we also used other types of data, particularly interviews. We conducted semi-structured interviews during the second half of the fieldwork (from April to December 2015) in order to obtain a rich knowledge of the activity and shared experiences (Becker and Geer, 1957). Such interviews ensure that in our observation we are not 'looking at the field we are studying the wrong way' (Beaud and Weber, 2010) and that we grasp the meaning of the observed situations. After the fieldwork stage, we also presented

our results to the members of the CCU to confirm our interpretations. Finally, we created an analytical framework based on the concept of ‘management situations’ to isolate and analyze the situations and the associated practices (Girin, 2011). Each selected situation was characterized through seven dimensions: number of participants, work areas, time sequences, material resources used, actions taken, outcomes and accountability of these actions. We also added the CCU’s global activity for each situation in terms of stock and flow of patients. Through the semi-structured and informal interviews, we were able to cross check our data to fill in possible gaps and confirm our understanding of the situations as the variety and the variability of cases make them difficult to describe given the technical nature and complexity of medicine. While the data were sometimes insufficient to reconstruct a situation entirely, we ultimately reconstructed 92 situations with sufficient details for analysis.

Results: Critical care situations and slack practices

In the following sections, we unpack the data collected and present the main results of our empirical study. First, we analyze the activity of the medical unit through critical care situations. This leads us to determine three types of situations (risky, emergency, crisis) according to the intensity of the activity, the pressure on resources it generates and the origin of the slack required to ensure organizational resilience. Second, we categorize slack production practices and use this to address the pressure on resources in each type of situation. Finally, we present a dynamic model of slack practices to explain how these practices ensure resilience according to the situation encountered and its evolution.

Analyzing the activity through the lens of critical care situations

After comparing the 92 situations in our sample, we identified the following five characteristics of the CCU’s activity which put pressure on its resources: 1) its status as an emergency unit which is operational 24/7, accepting patients with failing vital conditions;

2) its treatment of patients with life-threatening emergencies, which means their health can changed unexpectedly; 3) the need for the CCU to handle patients promptly – particularly to assess the seriousness of their condition – without putting them on hold and managing them later; 4) the need for the CCU to deal with a highly variable number of admissions and to not turn them away even if it is full; and 5) dependence of the CCU's levels of activity and occupancy on upstream flows (incoming patients from other hospitals or directly from accidents) and downstream flows (redirecting patients to other units after emergency care). Given the imperatives for action in this extreme context, our observations and the actors themselves identified the availability of resources as a key factor in ensuring resilience, and that having these resources in a timely manner can sometimes be a source of tension. We specifically observed how actors used what they called '*just in case resources*' or '*resources at hand but not always used*' to manage this tension. These 'slack resources' are available out of the situation – in the form of resources granted to the unit – or are sometimes produced as the situation unfolds.

Understanding all the activity of the CCU led us to categorize the care situations that the medical unit encounters. We analyzed each of the 92 situations we were able to characterize from our data and classified them according to their level of criticality based on three criteria: the condition of a new patient arriving in the unit (e.g. broken arm vs. gunshot wound with great blood loss); the evolution of the situation while caring for the patient (e.g. unruptured abdominal aortic aneurysm); and the care environment in the unit at that time (e.g. the occupancy rate, the condition of the patients already in the unit, the expected incoming patients). These analytical distinctions were validated during semi-structured and informal interviews with the team.

Following Journé and Raulet-Croset (2008), we grouped the situations that we analyzed into three types related to the resource pressures generated by the various situations (Table 2).

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Then, we established a correspondence between the situations and the origins of slack used in these situations (cf. infra).

<Insert Table 2 about here>

Risky situations are those situations that are normal in their intensity and the number of patients. Here, the context is risky but is “normal” for this kind of medical unit. Emergency situations are more intense situations because of the number of patients in the unit or a sudden change in a patient’s condition. Although they create resource pressures, these situations are part of the unit’s expected activity and are kept under control by creating slack resources when the situation occurs (situational slack). Crisis situations are a specific type of emergency situation where the resilience of the organization is at risk of failure due to a lack of resources or time pressures for mobilizing, reconfiguring or generating the resources. These situations are very rare; only one occurrence was observed during our 14-month period in the CCU and such events are widely discussed by the team because of their potential consequences.

The peak levels of activity are generally able to be controlled using the available resources (human, material or spatial) negotiated with the hospital’s administrative staff, outside the timeframe of the situations we studied. However, the tension and the time pressure can intensify because of the variability in the causes of the patients conditions (traffic accidents, brawls, domestic accidents, etc.); the variability in the hospital activity (in-patient bed occupancy); the number of patients already in the CCU and the evolution of their condition; and potential transfers from other smaller hospitals for the most severe cases. These factors can offset or reinforce each other, explaining why risky situations may evolve towards emergency ones. The CCU’s activity therefore has a large potential for disturbance and new

resources may be required. Two kinds of events shift the risky situation to an emergency one. The first is related to the qualitative variability in the condition of the patients, whether they are new or already in the CCU. The other is related to the quantitative variability in the care environment of the unit, driven by the variability in the elements listed above. By moving from the potentiality to the realization of extreme events, the pressure on resources requires rapid action that cannot be delayed to avoid risking patient safety.

Slack practices in critical care situations

To cope with the pressure on resources caused by the different situations, we observe that the medical unit actors employ various slack practices related to human and material resources, spatial resources and a queuing system. With regard to human and material resources, the medical unit has a significant level of slack granted officially by the administration which can be mobilized to treat patients. Indeed, as indicated by several actors, the CCU, as part of a large university hospital, has access to all the hospital's material, staff and specialist medical resources. One doctor told us: *'Here, no one has ever told me there are budget restrictions. That's the advantage of this unit. We have all the resources we need. No one has told me to stop at 25 packed red blood cells. If I stop, it's for medical reasons. There is no more hope. Never for financial reasons'* (Physician interview).

These resources can be referred to as 'official slack' (i.e. slack that is acknowledged and approved by the hospital administration) and they enable the risky situations, i.e. the majority of situations encountered, to be managed despite their variability. Many of the unit's resources for dealing with unexpected workflow are available as a result of negotiations with the hospital administration. These negotiations relate to the resources that are necessary between the official requirements for the hospital to respect a minimal staffing level and the medical requirements for the optimal care of patients. The Head of the CCU illustrated this, saying: *'The official text says, "It's 1 nurse for every 2 patients". For intensive care there is*

no official text, there are guidelines and recommendations for intensive care and continuing care. And that changes everything! You can go to see the hospital administration and tell them you want these. As there is no official text they'll say, "that's all very well but show me you need it" (Head of CCU interview).

Beyond the budgetary negotiations, doctors – particularly the Head of the CCU – play a key role in protecting slack. This requires them to participate in the hospital decision-making process in order to avoid managerial drift that could affect the quality of care. Indeed, the team emphasized that there is a significant distance between the frontline workers, whether doctors or paramedic staff, and the hospital administration. Doctors must therefore dedicate time to attending a large number of meetings to ensure that the metrics used by the administration are consistent with the reality of the field, and to provide the administration with an understanding of the reality in terms of quality of care and patient safety. For example: *'In the performance committee, they keep talking about lean management. That's the new big thing. You realize that the numbers they have are false. They have no idea about the level of activity. When the metrics show there are 2,000 complete hospitalizations, for them it's just a number. They don't have a medical view and there are errors every time. [...] And it takes up a lot of time. [...] The NPM [New Public Management] has transformed the hospital with a huge decrease in the power of doctors. Before, the Medical Establishment Commission had an important role; now, it feels like it's no longer useful. The steering committee or something like that, there are 5 or 6 of them, they decide more'* (Head of the CCU interview).

In emergency situations, new slack practices are employed to reconfigure existing resources and gather new ones. The medical team redirects the initial destination of a resource to a different one. For human resources, this is achieved through team members standing close by and letting their colleagues know they are there 'just in case', saying, for example: *'Do you*

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3 *want me to deal with the second arrival if he arrives too quickly?’ or ‘If you need me to, can I*
4 *do the central line while you manage the other patient?’* Another doctor in the team can also
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6 stay in the CCU to take a step back to get an overview of the activity and be ready in case his
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8 colleague needs him for a patient. With regard to the material resources, the most illustrative
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10 practice involves creating a fifth bed in the TR, where there are usually only four, so that
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12 extra patients can be absorbed when the CCU is overloaded. This is made possible by
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14 bringing a stretcher from the PORR, taking a mobile scope and a mobile respiratory device
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16 from the inventory room, and placing two folding screens in the middle of the TR to create
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18 this new bed.
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24 In addition to using the resources already in the CCU, we observed two practices to produce
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26 slack by bringing in extra human resources from outside the medical unit. First, the unit’s
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28 medical staff has a network of relationships that extends beyond official working hours and
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30 places. Using their personal smartphones, on-duty doctors regularly communicate with off-
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32 duty doctors to inform them of critical situations, and the off-duty doctors regularly inquire
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34 about the situation in the unit. Here, calls, texts or instant messaging apps (*WhatsApp*) are
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36 common and the usual mode of communication for permanently maintaining potential
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38 reinforcing resources. There is therefore no great compartmentalization between the CCU’s
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40 on- and off-duty doctors. There is a network of doctors in the field and others who can be
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42 called on to be prepared and, if necessary, to assist the unit. Second, when necessary, other
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44 human resources are also brought in from within the hospital. For example, during a night
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46 shift, an intern or a doctor can call an additional duty doctor from a unit with a lower variance
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48 of activity than the CCU and who can therefore intervene or be pre-mobilized when the
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50 situation requires. The CCU team members call this resource, ‘*The phone-a-friend*’ joker – a
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52 joke based on the TV show ‘*Who Wants to Be a Millionaire?*’.
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Furthermore, the spatial layout of the CCU and of the Emergency Centre facilitates the reconfiguration of space resources because of the spatial proximity and interconnection of the activity areas. As one physician explained: *'I need a bed in the post-op recovery room, but no bed is available. OK, no problem, I will take this and that. The nurse in charge knows about it and everything is reconfigured. It's a constant process of reconfiguration for physicians, nurses and assistant nurses at the same time'* (Physician interview).

Reconfiguration also takes place beyond the CCU's own walls. As previously mentioned, the anesthetic area of the operating rooms in the Emergency Center is managed by the anesthesiologists in the same team (who work alternatively in the CCU and the operating rooms and consult in the whole Emergency Center). Like the official slack for human and material resources, the layout of the workspace is also subject to negotiation. The doctors fought to participate in the conception of the CCU to design the spatial organization of the unit. They requested a specific form of spatial organization that provided flexibility during emergency activity. They favored a design where the operating rooms were on one side and the ICU was on the other, which was contrary to that of rationalized organization based on the different types of pathology. A nurse argued that: *'[The Head of the CCU] fought for it [the specific layout of the unit] to be created. If she had not been there, it would not exist: the Trauma Room next to the ICU, 15 meters from the operating rooms, and 15 meters from the medical scans. She fought to make it that way'* (Nurse interview).

In emergency situations, this spatial layout enables dedicated spaces to be used for other purposes. Thus, the most stable patient can be moved from the TR to the PORR when all the TR bays are occupied. In this way, the PORR becomes a 'Light Trauma Room' for taking care of patients according to their level of severity. Linked to the human and material slack, the spatial layout makes the use of resources smoother.

The last category of slack practices concerns the ‘queuing system’, i.e. the practices for managing the flow of patients and the patients already in the CCU (‘stock’) to avoid overloading the CCU. The CCU’s mission is to take care of the sickest patients whatever their condition, and it cannot send patients elsewhere to create its own slack by diverting or putting the flow of patients on hold. Thus, a lack of resources, specifically a lack of space in the unit, is never an excuse to refuse a patient admittance. Medical criteria alone determine the admittance or the refusal of a patient. To manage these important tensions, the team creates slack by creating a vacant bed (TR) or room (ICU) as quickly as possible. Consequently, managing the flow and the stock of patients includes making room for a ‘potential new or unexpected patient’.

In emergency situations, overloading arises and challenges the ability of the CCU to deal with the ‘potential new or unexpected patient’. The team’s priority is to free up space and make it ready as quickly as possible to receive other potential patients. To do so, the CCU doctors can increase the turnover of patients from the TR to the ICU. The patient trajectory does not change but is accelerated. Doctors can also negotiate patient transfers (new transfers or speed up scheduled transfers) with doctors from the other hospital units. The doctors’ relational network – based on their personal and professional relationships – facilitates these transfers. The higher the tension around transfers, the more the relational network and the ‘institutional weight’ of the doctor play an important role. This makes it more difficult for interns to negotiate such places than attending physicians, who have greater negotiating power. We repeatedly observed the head of the unit asking the intern or the doctor if he ‘needed help to make room’.

The CCU can use the slack produced in these ways completely, partially or even not at all. For example, while the creation of a fifth bed in the TR may be effective, it may not be used if patient transfers free up space a few hours later. Once the situation is managed and under

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control, situational slack is disbanded if it has not been entirely used or has been used and no longer exists. Official slack is reconstituted as soon as possible (free bed in the TR or free room in the ICU). After an extreme event, the CCU returns to a nominal state of a potential extreme event characterizing a risky situation.

Following our analysis, we can classify these interconnected practices involved in the production and use of slack into four main categories (Table 3) according to the situation and the two temporalities of the local ‘here-and-now accomplishments’ and the ‘elsewhere-and-then’ of other practices (Nicolini, 2009). In risky situations, the official slack is sufficient and is used to absorb the flow of patients. In emergency situations, the CCU team generates a surplus of resources from inside and outside the unit.

<Insert Table 3 about here>

In most situations, the CCU team benefits from its official slack and situational slack to manage the flow and patient’s condition. However, the slack can sometimes be completely used up even though the situation has not been fully managed. In such situations (referred to as ‘crisis situations’ in Table 2), there are risks of failure. The difficulty in overcoming such a situation and the subsequent tension in the medical unit then reach their climax. The medical unit tries to bounce back as fast as possible to recover equilibrium between the resources that are required and those that are available. The only such situation we observed related to the immediate need for a blood warming⁶ device for an urgent and massive transfusion, but the

⁶ Blood that is too cold and requires additional energy from the patient’s body, which – given its condition – presents a major risk: cardiac arrhythmia, hypothermia.

device was not ready to use. After the nurse had returned with the blood warmer and started to install it, the patient was closely monitored to make sure it was safe.

The dynamics of slack practices

The slack practices we identified and categorized unfold according to the situation and can be connected dynamically and in a processual view to understand how the CCU manages the flow of patients whatever the shocks caused by the number of patients and the severity of cases. Official slack depends largely on negotiations about and defense of the unit. While these practices occur at the hospital level following negotiations with the administration, they largely influence the daily activity of the unit by giving it budgets, positions, space and access to technical devices. Situational slack is different in that it produces extra resources or reconfigures existing resources to deal with increasing qualitative or quantitative variability. This production is added to the official slack absorbed in the unit and used during activity. Organizational resilience therefore depends on the ability to mobilize excess resources in a timely manner and according to the situation. An unpredictable situation (and its evolution) requires almost immediate availability of unused resources – ready-to-use slack. Resilience also requires rapidly finding a balance to get out of the crisis zone before organizational failure takes place. The inability to manage a life-threatening emergency within the time constraint is a rare and stressful event for team members. Even if the eventuality of death is an integral part of the medical unit, such inability puts patient safety at risk, with potentially fatal consequences.

Our approach to organizational slack led us to distinguish two roles of slack in organizational resilience: absorbing shocks and recovering from shocks according to the requirements of the situation (Table 4). In risky situations, official slack – available before the situation occurs – acts as a buffer absorbing shocks from the activity of the CCU. In emergency situations, the team actively produces situational slack and tries to recover from shocks. The analysis of

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slack practices and situations led us to add specific circumstances that occur when a high use of slack is not counterbalanced by the production of sufficient slack quickly enough. In these circumstances there is a shortage of resources, which challenges the resilience and generates a crisis situation. If the medical team recovers from this shortage in due time, the situation becomes an emergency one, otherwise there is a failure of organizational resilience.

<Insert Table 4 about here>

Following our analysis, we propose a dynamic model of slack production and use according to the situation and its evolution. This model links how resilience is ensured or jeopardized according to the level of slack (Figure 2). We consider each patient’s situation as a trajectory to investigate how a situation can change suddenly and unexpectedly. Indeed, a situation cannot be captured entirely by the concept of context, but rather evolves from one context to another, depending on whether the extreme event is potential or real. Slack practices are activated to ensure the resilience of the medical unit by producing slack in order to prevent the event from ‘exceed[ing] the organization’s capacity’ (Hannah et al., 2009: 898). We therefore analyzed each situation synchronically and diachronically to understand their characteristics, the corresponding slack practices, and the tipping points explaining the evolution of a situation. These tipping points unfold through the shift from one management mode of slack to another (Bouty and Drucker-Godard, 2019; Schakel et al., 2016).

In risky situations, official slack is available following negotiation with the administrative staff. Here, the role of the doctors is to negotiate and protect the slack. Tensions can appear in an unexpected situation or if a situation becomes unstable, resulting in the occurrence of an extreme event. Then, the medical unit situation shifts to an emergency one in which the available slack is used if necessary and some practices produce situational slack to maintain organizational resilience. If all the slack produced is used and there is still a lack of resources

to deal with the situation, then the unit shifts to a crisis management mode of slack. In this specific situation, resilience is challenged, and the unit tries to bounce back to balance the available and required resources to manage the situation. The unit gathers more human and material resources as quickly as possible from within and outside the unit. If the additional slack resources are sufficient to find a new balance, the unit returns to an emergency management mode of slack. If there are not enough slack resources, then organizational resilience may fail. According to the team, this, fortunately, is rarely observed in the unit due to the relatively high level of absorbed slack and the ability of the medical team to produce situational slack. As illustrated in Figure 2, the trajectories we described are not necessarily linear and the tipping points lead to a shift from one mode of managing slack to another (e.g. from risky to emergency or crisis mode). A risky situation can suddenly become a crisis situation without going through an intermediate stage. In this case, the team must act immediately and is under time pressure to gather the resources needed to deal with it. In the figure, the most frequent tipping point is when a situation evolves from being risky to an emergency due to a change in the patient's condition or the general situation in the unit. Once the patient's condition is brought back under control, the situation becomes risky again. However, the reverse relationship also exists. The team may be alerted to deal with a very serious health condition and produces slack (emergency situation), but the actual condition may turn out to be a risky situation and the unused situational slack is then disbanded.⁷ The two tipping points that lead to crisis situations are similar. The difference between the two is the lack of time required to produce situational slack when moving from a risky situation to a crisis situation. Tipping point 2 was observed only once when a serious situation worsened due to a lack of resources. Tipping point 3 is indicated for theoretical reasons and because we can imagine an unanticipated severe situation where there would be insufficient official slack.

⁷ That is why we have drawn a double-headed arrow in Figure 2.

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If such a situation were to occur, it is unlikely that there would be an immediate return to the risky situation mode.

<Insert Figure 2 about here>

Discussion

In this article, we adopted a practice perspective to provide insights on how organizational actors manage excess resources (slack) in extreme contexts. Practice theories seek to revisit traditional theories or concepts in organization theories or strategy to shed new light on traditional phenomena (Feldman and Orlikowski, 2011; Korica et al., 2017; Lounsbury and Beckman, 2015; Nicolini, 2009, 2013). By proposing the concept of slack practices and by studying their dynamics, we hope to contribute to the HRO literature which has provided insights into broad structural organizing principles – such as redundancy and loose coupling – but to a lesser extent into the micro-level processes that produce reliability and resilience (Weick et al., 1999). As Barton and Sutcliffe (2009: 1329) claim, ‘Yet, it is through micro-level social processes that the organizational practices that contribute to safety are enacted’.

Our 14-month ethnographic study in a French CCU enabled us to observe and analyze the role and deployment of slack in risky and emergency contexts (Hällgren et al., 2018), where reliability is a crucial organizational goal. We focused on slack as an important mechanism of organizational resilience, which, although often examined in the HRO literature at the structural and organizational levels (Vogus and Sutcliffe, 2007), is understudied at the situational level. Of course, the medical unit in our study – like the medical sector in general (Carroll and Rudolph, 2006) – also employs other HRO mechanisms and practices to ensure reliability. These include deference to and reliance on expertise and competence, importance

of routines, collective training and permanent learning from experience. We, therefore, do not suggest that slack is the sole necessary condition for maintaining a reliable production process. Instead, alongside other reliability mechanisms, we argue that it contributes importantly to resilience. To conclude, this study offers two main avenues for discussion.

Theoretical implications: Slack practices, situations and contexts

Our concept of slack practices insists not only on the use of slack resources according to the development of the situation but also on the production of these resources in action. While the literature on slack has traditionally downplayed the production side in favor of studying the organizational effects of *having* slack at the organizational level of analysis, situated observations encourage reasoning both in terms of stock and flow. According to the evolution of the situation, individuals not only use the slack they and their organization have produced ‘out there’ but also produce slack during action. This view of slack as resulting continuously from a stock and flows contrasts with the view of slack only as a stock in an entity-based paradigm (e.g. Feldman and Orlikowski, 2011; Hernes, 2008; Lindberg and Rantatalo, 2015). In this article, we argue that slack practices depend on the context, as demonstrated in several studies on coordination that use the practice lens (e.g. Bouty and Drucker-Godard, 2019; Faraj and Xiao, 2006; Schakel et al., 2016). In a risky context, slack acts as a cushion to absorb potential shocks, such as the sudden arrival of several critical patients. In an anticipatory approach to resilience, organizational actors must expect the unexpected, deploying slack practices ‘out there’ (Nicolini, 2009), i.e. essentially by negotiating with the hospital’s administration. These negotiations about the excess resources absorbed in the unit concern staff, the configuration of space or equipment. Although we label this slack as ‘official’, to differentiate it from situational slack, it requires a high level of regular involvement in administrative and budgetary negotiations to obtain more resources than are required by the average level of activity. While this slack may appear as a given, it is only

obtained through sustained efforts by the medical staff outside the unit. These resources constitute a potential stock that is recoverable, and which is deployed according to the situation being faced. These slack practices do not depend on specific situations but are aimed at fulfilling the unit's general mission.

Our observations show that this negotiated slack is generally sufficient and that the design of the technological and human systems is adapted to the unit's mission. But, unlike Hällgren et al. (2018), who tend to reify the context, we argue that these slack practices are constitutive of the risky context as they enable the deviations in the activity to be kept under control. It is *because* slack has been negotiated out of the flow of patients that the context remains risky and does not always switch to an emergency context. By taking a practice perspective, we avoid any reification of the context (i.e. risky or emergency *per se*) and consider it in relation to the practices involved. From this perspective, and from the point of view of slack practices, the context becomes one of emergency when the negotiated slack is found to be temporarily insufficient. Indeed, contexts do not represent a stabilized state of the world. As we demonstrated through our CCU observations, they can evolve from a risky to an emergency context – eventually becoming a crisis situation – when potential disruptions *in the situations* take effect, i.e. when the production of slack is overwhelmed by the requirements of the situation. This can happen for qualitative or quantitative reasons which create tipping points in the situations. Then, new slack practices occur to produce situational slack. We can sum up our observations by arguing theoretically that the situation commands the context and, consequently, that changing contexts are a recurrent and habitual characteristic of the activity because situations evolve. These recurrent switches between contexts and situations correspond to the complexity of the world (Tsoukas, 2017).

Implications for practice: Why New Public Management endangers resilience

A second point of discussion relates to the debate in the literature about the form, level and relationship of slack with performance. For some authors, unabsorbed or available slack (Bourgeois and Singh, 1983; Singh, 1986) (i.e. not ingrained or incorporated in the organizational working activities, typically cash and receivables) gives organizations a high level of discretion and may ultimately ensure adaptability at the organizational level. Due to the potential discretionary use of these resources (George, 2005), slack can initiate change in organizations (Zajac et al., 1991), including innovation (Herold et al., 2006; Nohria and Gulati, 1996, 1997; Singh, 1986; Slappendel, 1996), opportunity exploration (Argilés Bosch et al., 2016) and risk-taking (Bromiley, 1991; Nohria and Gulati, 1997; Singh, 1986). The context of our case – and of HROs more generally – is fundamentally different to the context traditionally studied in the literature on slack (i.e. mostly firms) and demonstrates that the flexibility attributed to unabsorbed slack does not hold true in extreme contexts. Indeed, the mission of the unit we observed is to save lives and requires reliability to be ensured in rapidly changing contexts. As we have seen, what partly guarantees this reliability is the absorbed slack, i.e. the resources absorbed in the daily practices of the professionals or the design of the organizational system (Bourgeois and Singh, 1983). But this slack generates, in parallel, excess costs. This means that the unit ensures the achievement of its mission by not being entirely concerned with efficiency. This raises the issue of the levels of slack in the context of French hospitals and many public sectors around the world.

Because of its high discretionary dimension, slack can have ambivalent organizational effects. While some of the organizational literature considers slack to have positive effects, from an agency theory perspective it also gives organizations and individuals latitude to relax controls and to pursue risky projects with uncertain outcomes (George, 2005; March and Shapira, 1987; Nohria and Gulati, 1996; Williamson, 1963). This conception corresponds to the ‘contractualist’ view promoted by New Public Management (NPM) in the public sector

and its basic focus on efficiency (Lane, 2002). NPM puts greater emphasis on parsimony in the use of resources and encourages finding cheaper ways to deliver public services, doing more with less, and making standards of performance more explicit and measurable (e.g. Hood, 1995; Hood and Jackson, 1991). NPM and its efficiency logic raises serious issues for the public sector as it introduces and brings to the fore economic criteria in organizations whose performance criteria are not economic (Hollnagel et al., 2009). For example, a group of French military experts recently pointed out that ‘economic concern with defense, let’s say efficiency, is a recent idea. This idea contrasts with military concepts such as “available reserves”, “redundancy” and “higher-powered force”, which are necessary for operational efficacy and what is today called resilience (...)’ (La Tribune, 27/04/2020).⁸ The potential deleterious or counterproductive effects of NPM, especially in hospitals have been highlighted by several studies (Simonet, 2014). The principles of NPM may contradict the ethos of public agents dedicated to the public good – such as health – demotivate them and reduce their commitment (Williams et al., 2012). The managerialism that accompanies NPM may lead to worry, anxiety and distress among employees (Chandler et al., 2002), and some reforms may lead to exactly the opposite of the intended outcomes, such as the ‘queue billion’ in Sweden, which induced bad practices (Hansson, 2014). While HROs must emphasize reliability over efficiency (Casler, 2014; Hood and Jackson, 1991; La Porte and Consolini, 1991; Roberts et al., 2004), the NPM focus on cost efficiency tends to suppress slack. As Karlene H. Roberts concludes, ‘when organizations are under scrutiny for cost control often the first two things to go are slack (which allows for redundancy) and training. Both contribute to reliability enhancement’ (Bourrier, 2005: 95).

⁸ Not to mention the recent Covid-19 pandemic which has illustrated perfectly how efficiency in the management of stock and supplies can reduce the reliability of the health system in many countries.

In the general context of the diffusion of NPM across most OECD countries since the 1980s, slack practices can help to protect the values and ethos of health staff by reliably maintaining the core activity despite fluctuations. However, slack practices and their positive impacts rest on what is largely invisible activity. This invisibility is first due to the situational processes of production and use, which are not reported to hospital management. Second, as we underlined above, some of the slack is disbanded after it has been used – without reporting – which contributes to the invisibility of these practices. While NPM demands accountability and standardization, some of the real work is informal and does not correspond to these requirements. We believe that the invisibility of the practices that make an important contribution to the core activity may lead to the administrative and political representatives being blind to the daily efforts made by individuals. Stretching the daily workload cannot be infinite, as exemplified by the 2016 French General Commission of Social Affairs' Report, which alarmingly estimated that 45% of French interns displayed burnout symptoms that eventually led to depression or suicide (Desailly-Chanson et al., 2016).

With regard to the partial invisibility of the situated work, using a practice lens helps to avoid looking at NPM from an exclusively structurally oriented point of view that ignores the 'work on the shop floor' (Almklov and Antonsen, 2014). As Almklov and Antonsen (2014) theorized, the NPM view of work contrasts with a more realistic and operational view, which may explain why it can lead to disaster (Hood and Jackson, 1991). Whereas NPM promotes visible output, measurable performance, the fragmentation of work into specific tasks or management of repetitive and expected tasks, the practice perspective and an operational view of core work processes focus on invisible outcomes, management of the unexpected, continuous operations and reliability. We could add that NPM tends to focus on average levels of organizational systems, whereas reliability requires being prepared for a high degree of variability. These two contrasting views of work explain why slack practices may be in

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danger in an institutional context that promotes NPM and where these practices are vital for ensuring the mission of a public organization in which reliability is the main criterion for saving lives. In this context, protecting and negotiating slack depends on the ability of actors to justify what may appear to be wasted and unproductive resources and non-visible processes (Casler, 2014: 240).

The role of strong leadership at the head of such organizations and the ‘coalition-forming activities’ in an organization (Bourgeois and Singh, 1983) therefore appear to be crucial for decoupling – at least partially – the tendency towards managerialism and the ‘real’ work activity (Doolin, 2001). Although we have not explored these specific issues, it could be important to study more deeply how actors negotiate slack within the hospital as well as outside the hospital because the hospital's administrative hierarchy is itself under the NPM rules of administrative supervision. In this general context, various power relationships constitute an alternative hypothesis for obtaining more slack resources. As Cyert and March (1963) asserted, slack is distributed differentially within organizations, suggesting that some actors may obtain a greater share of the slack than others according to their power.

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Biographies

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Table 1 – The dynamic observation strategy of the CCU

Observation tactic	Observation position	Length	Objectives	Occurrences (approximate)
Systematic	Fixed (e.g. Trauma Room)	Long (day shift; 24h shift)	Observing the daily activities and the regularities in the organization	90–100
Random	Fixed (e.g. transferring a patient)	Short (10–30 minutes)	Providing detailed data about sequences of activities	500–600
Planned	Mobile (e.g. following an intern)	Long (0.5–1 day shift)	Shadowing (Czarniawska, 2004): understanding subjective interpretations of situations and the tasks performed by actors	50–60
Opportunist	Mobile (e.g. cardiac arrest management)	Variable (depending on the situation occurring)	Grasping unforeseen problems and its management by the actors	120–130

Table 2 – Type and number of situations studied

Extreme context	Type of situation	Frequency	Empirical examples	Origins of slack
Risky	Risky	80	- Scooter accident with tibia + wrist fractures - Fall down stairs, hip fracture, respiratory disorder - Pedestrian knocked over by a car, loss of consciousness	- Out of the situation
Emergency	Emergency	11	- Two children simultaneously hit by a car - Fall from 2 nd -floor reception onto concrete floor, cardiorespiratory arrest during transportation - Motorcycle crash, high velocity with cranial trauma and serious thorax injuries	- Out of the situation - Situational
	Crisis	1	- Cannot do a quick blood transfusion	- Out of the situation - Situational (<i>Shortage</i>)

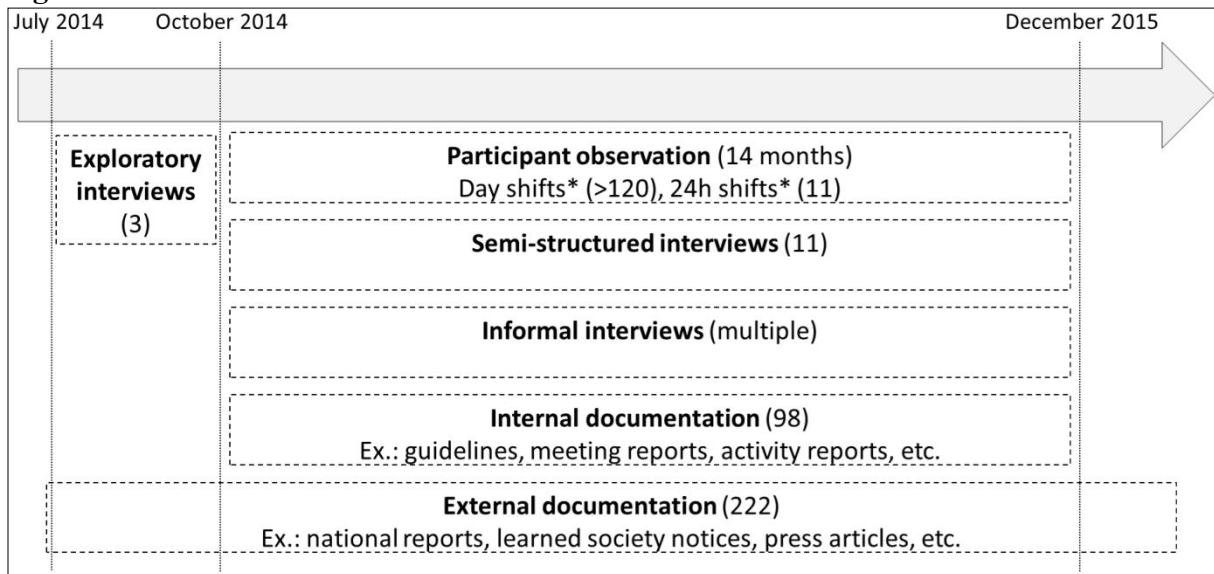
Table 3 – Slack practices according to the type of situations

	In the unit	Outside the unit
Risky situation	Queuing system Managing flow/stock of patients to make room vacant ASAP Use of official slack Reconstituting official slack Free bed in the TR or free room in the ICU	Human and material resources Negotiating excess resources (annual budgetary meetings with the administration) Protecting excess resources (periodic performance committees) Spatial resources Participating in the spatial layout design of the medical unit
Emergency situation	Human and material resources Mobilizing colleagues (nurses, doctors) in the unit Repurposing existing material resources (5th slot) Spatial resources Repurposing existing spatial resources (PORR slot becomes a 'Light Trauma Room slot') Queuing system Accelerating turnover to free up TR slots Use of situational slack Disbanding situational slack Resources to create a 5th TR slot return to their nominal use Nurse or doctor returns to original position Light Trauma Room slot in the PORR returns to a standard PORR slot	Human and material resources Using interpersonal network to call colleagues (phone-a-friend, WhatsApp) Queuing system Negotiating to accelerate patient transfers elsewhere

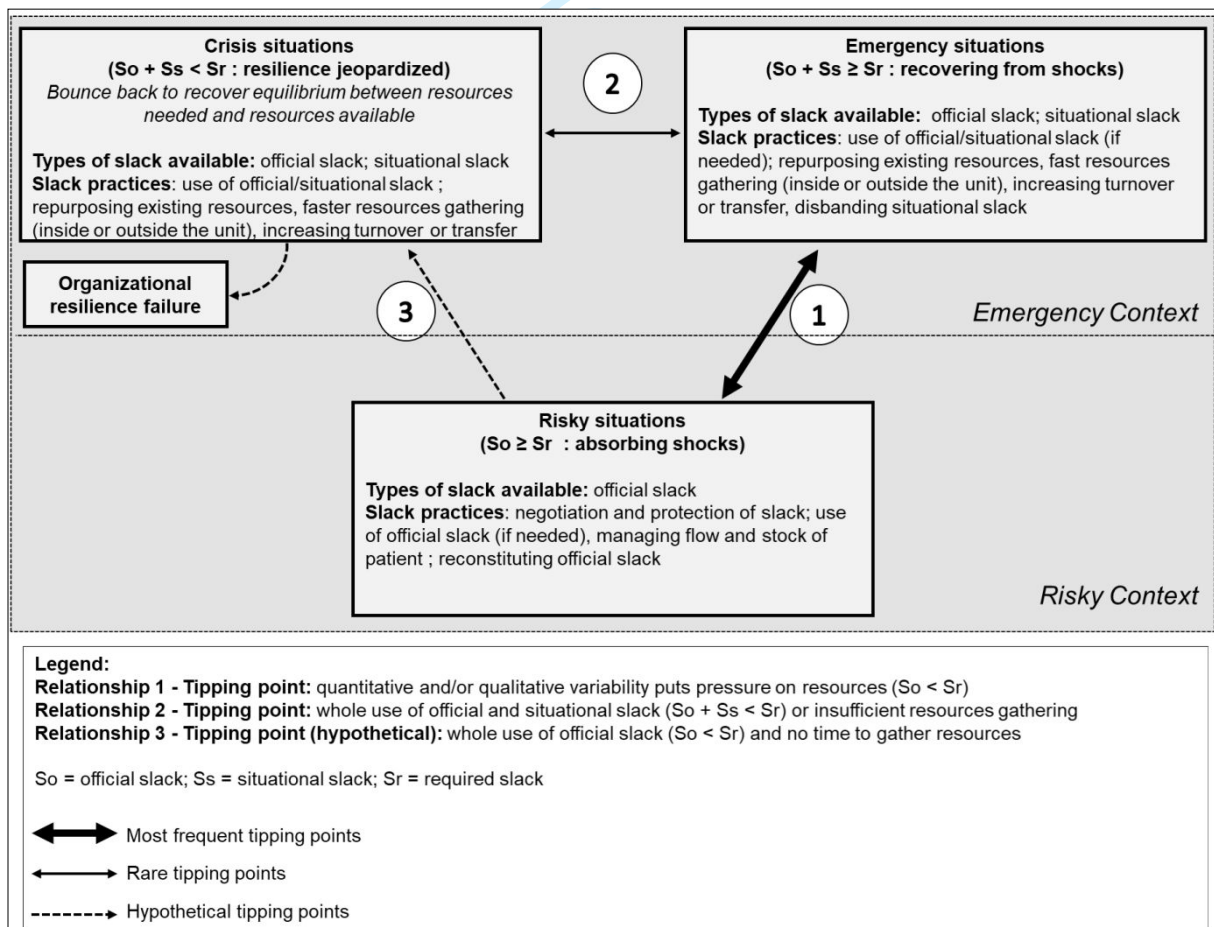
Table 4 – Role of slack in organizational resilience

Type of situation	Production and use of slack	Role of slack in organizational resilience	Origins of slack	#Situations analyzed
Risky	$So \geq Sr$	Absorbing	Out of the situation	80
Emergency	$So + Ss \geq Sr$	Recovering	Out of the situation Situational	11
Crisis	$So + Ss < Sr$ (resource shortage)	Recovering	Out of the situation Situational	1

Legend: So: official slack; Ss: situational slack; Sr: required slack

Figure 1 – Data collected

*A day shift refers to being in the CCU from 7:30 am to 5:30 pm; a 24h shift refers to being in the CCU for 24 hours.

Figure 2 – Dynamics of production and use of slack according to the situation

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