



HAL
open science

Exploring the dynamics of slack in extreme contexts

Geoffrey Leuridan, Benoît Demil

► **To cite this version:**

Geoffrey Leuridan, Benoît Demil. Exploring the dynamics of slack in extreme contexts. *Human Relations*, 2022, 75 (6), pp.1167-1193. 10.1177/00187267211007786 . hal-03931024

HAL Id: hal-03931024

<https://hal.science/hal-03931024v1>

Submitted on 9 Jan 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

human relations

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

| | |
|------------------|---|
| Journal: | <i>Human Relations</i> |
| Manuscript ID | HR-2020-0001.R2 |
| Manuscript Type: | Standard Manuscript |
| Keywords: | ethnographic research, slack, practices, resources, extreme context, critical care unit, new public management, organizational resilience |
| | |

SCHOLARONE™
Manuscripts

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

Geoffrey Leuridan

IMT Atlantique, LEMNA, France

Benoît Demil

Univ. Lille - LUMEN, ULR 4999, Lille, France

Corresponding author:

Geoffrey Leuridan, IMT Atlantique, 4 rue Alfred Kastler, BP 20 722, 44307 Nantes CEDEX 3, France

geoffrey.leuridan@imt-atlantique.fr

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.

Keywords: ethnographic research, slack, practices, resources, extreme context, critical care unit, new public management, organizational resilience

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.

1
2
3 is a nexus of material arrangements and human practices, to study slack in action. We focus
4 particularly on the resources implied, produced and used² by actors to perform their activities
5
6 as the material underpinnings of practices are of prime importance (Feldman and Worline,
7
8 2011; Nicolini, 2009; Schakel et al., 2016).
9

10
11
12 Carrying out a 14-month ethnographic empirical study in a French Critical Care Unit (CCU),
13
14 we reveal what we refer to as ‘slack practices’, i.e. the practices that are employed to produce
15
16 and use excess resources when operating in risky and emergency contexts. These contexts
17
18 refer, respectively, to situations which potentially or actually endanger the core activity of an
19
20 organization (Hällgren et al., 2018). From our empirical study, we develop a model
21
22 connecting risky and emergency contexts with the micro-dynamics of the production and use
23
24 of slack by actors according to the situation. When the context is risky, the slack accumulated
25
26 in the unit is sufficient to maintain resilience. However, the context can shift to one of
27
28 emergency and may require the production of situational slack to cope with unexpected use.
29
30 Beyond depicting these general dynamics, the main contributions of our study are threefold.
31
32 First, our research highlights the situational slack production practices and the importance of
33
34 absorbed slack for a HRO to ensure reliability. Second, the micro-practices not only depend
35
36 on contexts but are also constitutive of these contexts, underlining the theoretical flaw of
37
38 reifying the concept of context. Finally, we point out the invisibility of these practices at the
39
40 organizational level and the unfolding danger of the New Public Management context, which
41
42 primarily targets cost efficiency.
43
44
45
46
47
48
49
50
51
52

53
54 ² We opt for the word ‘use’ and not ‘consumption’ as for us ‘consumption’ denotes actors
55
56 having a passive role. ‘Use’ – as the resourcing view claims – refers to a creative human
57
58 activity.
59
60

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,

1
2
3 characterized by events that might occur and affect the core activity of an organization
4 (potential disruption), from emergency contexts, where disrupting events actually occur.³ In
5
6 these contexts, slack resources can absorb shocks by preventing or by recovering from the
7
8 occurrence of events, i.e. by being resilient by maintaining a positive adjustment under
9
10 challenging conditions (Sutcliffe and Vogus, 2003: 95). The normal accident theory (NAT)
11
12 (Perrow, 1984) and HRO literatures offer typical examples of how organizations facing
13
14 potential dramatic risks use slack to prevent the occurrence of catastrophic events, as their
15
16 failure could have disastrous consequences (Casler, 2014; Roberts, 1990; Roberts et al.,
17
18 2004). For instance, studying the Diablo Canyon nuclear power plant, Schulman (1993)
19
20 observed that in addition to slack in resources – constituted by redundancy of equipment,
21
22 supplies or personnel relative to current demand – conceptual slack, i.e. producing potentially
23
24 divergent interpretations, was also important for ensuring reliability.

25
26 While slack can prevent the occurrence of disrupting or adverse events through an
27
28 anticipatory approach, it can also absorb shocks when disrupting events occur, i.e. when the
29
30 extreme context becomes one of emergency (Hällgren et al., 2018). For instance, studying an
31
32 unexpected doctors' strike in San Francisco's hospitals, Meyer (1982) observed that jolts had
33
34 a variety of impacts and were partly influenced by the hospitals' levels of slack. Some
35
36 hospitals absorbed the strike by opting to deplete their financial reserves, while others laid off
37
38 employees. Depending on their strategies and ideologies, surplus financial reserves or human
39
40 slack resources helped to absorb the effects of the strike.

41
42 Although slack can be considered as critical for ensuring the resilience of organizations –
43
44 either by preventing dramatic events or by managing them once they occur – the literature
45
46

47
48
49
50
51
52
53
54 ³ While Hällgren et al. (2018) envisaged a third category – the disruptive context –
55
56 disconnected from the core activity of an organization, we do not discuss it within the scope
57
58 of this article.
59
60

1
2
3 only provides a general view about its relationship with resilience. How organizations
4 produce and use slack before and during unforeseen events remains largely unexplored
5
6 (Vogus and Sutcliffe, 2007). With the exception of Schulman's (1993) detailed study about
7
8 redundancy, few works explain how slack intervenes concretely in the resilience process
9
10 whereas 'it is not merely the stocks of resources that determine resilience, but also the
11
12 deployment of the resources that exist' (Vogus and Sutcliffe, 2007: 3421). As we explain
13
14 below, we chose to study how slack participates in resilience in extreme contexts through the
15
16 practice theoretical lens, as suggested by Hällgren et al. (2018: 144–145).
17
18
19
20
21

22 **A practice perspective on slack**

23
24 A small group of studies on slack suggest that slack resources are managed intentionally by
25
26 individuals and organizations to achieve their goals and, eventually, to ensure resilience.
27
28 They show that: surplus personnel can be used to offset the adverse effects of unskilled labor
29
30 (Sgourev and van Lent, 2017); excess production capacity enables organizations to be
31
32 flexible without incurring significant penalties (Jack and Raturi, 2002, 2003); excess sales
33
34 can be managed to create a 'sales surprise' to improve the valuation of firms by investors
35
36 (Manikas and Patel, 2016); and managers can create slack in the budgeting process by
37
38 negotiating achievable targets (Merchant, 1985). Although these studies do not refer to
39
40 extreme contexts, they illustrate the agency of individuals both in the production and use of
41
42 slack resources to achieve individual or organizational purposes. However, due to their
43
44 methodology, empirical groundings and theoretical approach, these studies do not examine
45
46 the production and use of slack as processes in the making and in situ, as the practice
47
48 perspective would require (Schakel et al., 2016: 392). Similarly, the NAT (e.g. Perrow, 1984)
49
50 and HRO literatures (e.g. Schulman, 1993) remain at the structural and organizational levels
51
52 of analysis (Barton and Sutcliffe, 2009). They emphasize the 'being' – stock of resources,
53
54 loose coupling structures or redundancy of functions – rather than the 'becoming' (Hernes,
55
56
57
58
59
60

1
2
3 2008), ignoring issues of time, process, uniqueness or context (Tsoukas, 2017). Moreover,
4 these studies postulate that resources have innate features and qualities, while authors such as
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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.

1
2
3 First, as ‘practice is understood as something that people do in “real” or everyday life’
4 (Miettinen et al., 2009: 1312), we depart from the slack literature which has traditionally
5 searched for acontextual stable relationships between slack and other phenomena such as
6 innovation, bankruptcy, risk-taking, absorption of critical events and so on at the
7 organizational level. The practice perspective considers the mundane activities in working
8 situations to be important, taking a micro-view of the production and use of slack. To our
9 knowledge, only Sgourev and van Lent (2017: 1294) have developed the view of slack as a
10 human resource management practice which consists in using extra human resources to
11 compensate for skill shortages in carrying out organizational processes. However, we stray
12 from their focus by considering simultaneously the use and production of situational slack
13 during action.
14
15
16
17
18
19
20
21
22
23
24
25
26
27

28 Second, despite their repetitive dimension, practices enable the creativity and change required
29 to adapt and act in constantly changing circumstances (Orlikowski, 1996; Tsoukas and Chia,
30 2002). As argued by Nicolini and Monteiro (2017: 114) ‘performing a practice always
31 requires adapting to new circumstances, as its accomplishment is neither mindless repetition
32 nor complete invention’. This is especially important in extreme contexts where situations
33 can evolve rapidly and unexpectedly. For instance, Faraj and Xiao (2006) observed new
34 practices, such as epistemic contestation, joint sensemaking and cross-boundary intervention,
35 in a trauma center when a patient’s reaction to treatment deviated from the plans and their
36 health was at immediate risk. This conjunction of routines, change and novelty in situated
37 actions emerges from the dynamic of different interactions (Gherardi, 2012). Consequently,
38 the concept of site invites us to unpack the familiar idea that context matters (Nicolini, 2011)
39 when observing the ‘world in the making’ in a simultaneously creative and routinized way.
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54

55 Third, the ontology of the practice-based approach considers entwinement or entanglement as
56 the basic form of being in the world (Hernes, 2008; Sandberg and Dall’Alba, 2009),
57
58
59
60

1
2
3 underlining the radical inseparability of humans and the socio-material world they live in
4
5 (Sandberg and Tsoukas, 2011: 343). While practices are considered in situ, they consequently
6
7 bring to the fore the material and technological entanglement in practice to perform activities
8
9 based on a relational ontology (Feldman and Worline, 2011; Hernes, 2008; Orlikowski, 2010;
10
11 Schakel et al., 2016). This invites the researcher to pay attention to mundane objects,
12
13 technologies and resources that are processed or ‘how they [resources] are brought into use’
14
15 (Feldman and Worline, 2011: 631).
16
17

18
19 Finally, practice research studies organizations less as entities and more as entangled social
20
21 processes for organizing, i.e. open-ended and pervasive processes of organizing and changing
22
23 through permanent enactment and mutual constitution (Feldman and Orlikowski, 2011;
24
25 Feldman and Worline, 2011; Hernes, 2008; Tsoukas and Chia, 2002). As social ordering
26
27 structures emerge from situated (inter)actions and relationships, ‘practice approaches are
28
29 fundamentally processual and tend to see the world as an ongoing routinized and recurrent
30
31 accomplishment’ (Nicolini, 2013: 3). Thus, instead of considering slack as a fixed stock of
32
33 surplus resources, the practice view invites us to consider slack practices as processes that
34
35 unfold over time. Because the elements of a practice are not fixed and ‘follow a trajectory of
36
37 becoming’ (Gherardi, 2012; Tsoukas and Chia, 2002), a processual view can illuminate the
38
39 mechanisms that connect slack and resilience (Vogus and Sutcliffe, 2007). This processual
40
41 approach requires a qualitative commitment to produce processual, fine-grained observations
42
43 to understand the practices as they happen in the workplace (Gherardi, 2012; Nicolini, 2013).
44
45
46
47
48
49

50 **Methods**

51 *Description of the Critical Care Unit*

52
53
54
55 Extreme-context research includes a variety of environments, such as emergency or critical
56
57 care units in the healthcare sector, where the activity contains risk – actual or potential – for
58
59
60

1
2
3 individuals, teams or organizations (e.g. Faraj and Xiao, 2006; Roberts et al., 2005; Tamuz
4 and Thomas, 2006). Our fieldwork takes place in a CCU linked to the Emergency Center of a
5 French university hospital – one of the biggest in the country. The CCU is only one
6 component of the hospital's Emergency Center, which is composed of several other medical
7 units such as the Emergency Department and Pediatric Emergency Department. Inside the
8 Emergency Center, the CCU looks after patients with critical conditions such as
9 cardiopulmonary arrest, poly-traumatic injuries and strokes. With an average of one patient
10 dying in the CCU every two days, death is inherent in the activity of this type of medical unit
11 and the severity of the cases handled. However, given the severity of the medical cases
12 admitted to the unit, the death of a patient is not necessarily the consequence of a failure in
13 organizational resilience.

14
15 The CCU has three missions: handling vital emergencies, post-surgery monitoring and
16 intensive care management. Its general mission is to treat patients with life-threatening
17 conditions, i.e. *'when your organs are no longer capable of maintaining a sufficient level of*
18 *vital functions'* (Head of the CCU interview). The unit therefore has to manage patients in a
19 medical emergency situation regardless of the available capacity, maintaining their vital
20 functions until a medical specialty (traumatology, cardiology, neurosurgery, etc.) can treat
21 them: *'That's why the CCU and the operating rooms are connected. Anyway, we are not the*
22 *ones who will heal them; we are the ones who enable them to live until they are fixed'*
23 (Physician interview).

24
25 The same number of staff works in the CCU night and day, on normal working days and
26 holidays. The staff includes nurses, assistant nurses, doctors and interns who specialize in
27 intensive care anesthesiology. Taking account of leave and sickness days, there is a total staff
28 of 40, who are organized into shifts to ensure a continuous service. Among this staff, the
29 anesthesiology interns are unique as they are trainees and are assigned to the department for
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 six months. Overall, there are one doctor, one intern, four nurses and four assistant nurses 24
4 hours a day in the CCU.
5
6

7
8 The CCU has three areas of activity. First, the Trauma Room (TR) (4 beds) is where patients
9 with critical life-threatening conditions and injuries are assessed to stabilize them. This
10 involves initial medical examination, clinical evaluation monitoring, etc. The other two areas
11 (the Intensive Care Unit (ICU) and Post-Operation Recovery Room (PORR)) are both
12 spatially connected to the TR. The ICU (8 beds) is responsible for patients whose conditions
13 are too unstable to allow them to be transferred to a specialist unit while they require close
14 monitoring. The PORR (6 beds) is dedicated to the Emergency Center's operating rooms and
15 monitors patients after surgery. The nurses and assistant nurses are allocated to these different
16 areas: one nurse and one assistant nurse work in the TR, two nurses and two assistant nurses
17 work in the ICU, and one nurse and one assistant nurse work in the PORR. The doctors
18 oversee both the CCU and the anesthetic function of the emergency operating rooms.
19
20
21
22
23
24
25
26
27
28
29
30
31
32

33 The CCU has two essential characteristics. First, like other emergency units in the
34 Emergency Center, it is an entry point for unplanned patients. It admits around 3,000 patients
35 per year who stay in the unit for a period ranging from a few minutes (for example if the
36 patient is under surveillance before surgery) to 72 hours.⁴ The unit accommodates up to 15
37 patients per day. Similarly, there is an extremely high variance in the severity of cases,
38 ranging from simple fractures to serious poly-trauma, and in the pathologies (neurosurgical,
39 visceral, cardiac, etc.). Patients may also have sustained injuries or have become injured as a
40 result of a wide range of circumstances, such as a car accident, a fall from a roof, gunshot
41 wounds, as well as aneurysms, strokes and post-surgical complications. Second, the activity
42
43
44
45
46
47
48
49
50
51
52
53

54 ⁴ Administrative rules state that this type of ICU cannot hold a patient for more than 72 hours.
55 After 72 hours, the patient must have access to a bed in another ward (or another hospital) or
56 be able to leave the hospital.
57
58
59
60

1
2
3 takes place in a highly technological environment to deal with life-threatening events. This
4 makes the CCU similar to a HRO (e.g. Madsen et al., 2006; Roberts et al., 2005), as it
5 regularly has to manage unanticipated events with potentially dramatic consequences in a
6 complex technological and organizational environment. Indeed, the CCU's operations require
7 access to numerous and diverse technical resources both inside the unit (monitoring devices,
8 life-support systems, specific technical devices, computers) and outside the unit. The latter
9 resources (CT scanner, MRI scanner, X-ray, blood bank, etc.) are shared within the entire
10 Emergency Center. They enable the CCU to be designated as a 'trauma center', i.e. an
11 organization that can manage the whole trauma without transferring the patient to a specialist
12 unit. The other resources required for care – whether technical or human – are available
13 within the hospital and can be forwarded to the unit when necessary. These resources come to
14 the patients rather than the patients going to the resources.

31 *Ethnographic approach and data collection*

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

40 Our fieldwork took the form of a 14-month ethnographic study conducted by one of the
41 authors in a CCU where, as well as collecting data, the researcher lived with the group and
42 was immersed in its everyday life as an 'active member' of the unit (Adler and Adler, 1987).
43 He was acknowledged as a management researcher (with his own research agenda) and, at
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 the same time, helped the team to take care of patients. Given his lack of medical skills, his
4 participation consisted in doing the ‘grunt work’ (Barley, 1990: 238), such as carrying
5 patients on stretchers, helping with administrative tasks or fixing computer problems. As a
6 researcher, he collaborated scientifically to better understand the operations of the unit to
7 improve patient safety.⁵

8
9
10 Our ethnographic approach is based on the rigorous observation of a small group of people
11 (the medical team) with whom we had personal interactions (Cunliffe, 2010). To understand
12 the people’s work ‘from the native’s point of view’ (Miettinen et al., 2009), we explore
13 situated understandings of managerial practices, how they are accomplished in particular
14 places and times, and how they are brought together and/or made distinct from other
15 activities, before considering and theorizing their possible effects (Korica et al., 2017). Our
16 methodology combined participant observation and semi-structured and informal interviews
17 during the observation period with the collection of secondary data (such as activity reports
18 and procedure guidelines) to refine and validate our abductive analysis (Figure 1). These
19 sources enabled us to retrace the life of the unit, its repeated practices in habitual situations,
20 exercise of human agency and ‘daily doings’ (Korica et al., 2017).

21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42 <Insert Figure 1 about here>
43
44
45
46

47 Observation methods require a specific approach for making rigorous observation (Barley,
48 1990) and ‘choosing different angles for observation’ (Nicolini, 2009: 1398). As a CCU’s
49 activity can be characterized by unpredictability, time pressure and sudden changes,
50

51
52
53
54 ⁵ For instance, this collaboration led to the presentation at the French Society of Anesthesia &
55 Intensive Care Medicine Annual Meeting in 2016 of a co-authored paper which highlighted
56 the contribution of HRO principles to improving patient safety.
57
58
59
60

1
2
3 observation should therefore include unplanned activity, density of actions in a short amount
4 of time, multiple spaces used for the same patient and the team's movements between these
5 spaces. Hence, the specificities of the CCU required a fixed, systematic and mobile system to
6 monitor a situation or to follow an actor. Based on the characteristics of the activity and the
7 observation approach developed by Journé (2005, 2012), we adopted an observation strategy
8 combining four different tactics according to spatial and temporal variables (Table 1). This
9 strategy enables us to capture the resilience of the unit, defined here as being successful in
10 handling the flow of patients whatever their number and the severity of cases. Indeed, as
11 Weick and Sutcliffe (2007: 40) recalled ' [...] there are constant outcomes and nothing to
12 watch. That does not mean that nothing is happening'.

13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28 <Insert Table 1 about here>
29
30
31
32

33 To meet the need for in-depth analysis, we validated our results using three strategies. First,
34 our study involved team work where one researcher (*the insider*) debriefed the other (*the*
35 *outsider*). Working in tandem has two main advantages: it validates the interpretations from
36 two different viewpoints and avoids being too close to the ethnographic fieldwork –
37 especially the emotional part of working in a CCU – in order to keep an analytical distance
38 (Adler and Adler, 2012). Second, we used data triangulation (Eisenhardt, 1989) to ensure the
39 validity of our findings. Beyond the fieldnotes, we also used other types of data, particularly
40 interviews. We conducted semi-structured interviews during the second half of the fieldwork
41 (from April to December 2015) in order to obtain a rich knowledge of the activity and shared
42 experiences (Becker and Geer, 1957). Such interviews ensure that in our observation we are
43 not 'looking at the field we are studying the wrong way' (Beaud and Weber, 2010) and that
44 we grasp the meaning of the observed situations. After the fieldwork stage, we also presented
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 our results to the members of the CCU to confirm our interpretations. Finally, we created an
4 analytical framework based on the concept of ‘management situations’ to isolate and analyze
5 the situations and the associated practices (Girin, 2011). Each selected situation was
6 characterized through seven dimensions: number of participants, work areas, time sequences,
7 material resources used, actions taken, outcomes and accountability of these actions. We also
8 added the CCU’s global activity for each situation in terms of stock and flow of patients.
9
10 Through the semi-structured and informal interviews, we were able to cross check our data to
11 fill in possible gaps and confirm our understanding of the situations as the variety and the
12 variability of cases make them difficult to describe given the technical nature and complexity
13 of medicine. While the data were sometimes insufficient to reconstruct a situation entirely,
14 we ultimately reconstructed 92 situations with sufficient details for analysis.

25 26 27 28 29 **Results: Critical care situations and slack practices**

30
31 In the following sections, we unpack the data collected and present the main results of our
32 empirical study. First, we analyze the activity of the medical unit through critical care
33 situations. This leads us to determine three types of situations (risky, emergency, crisis)
34 according to the intensity of the activity, the pressure on resources it generates and the origin
35 of the slack required to ensure organizational resilience. Second, we categorize slack
36 production practices and use this to address the pressure on resources in each type of
37 situation. Finally, we present a dynamic model of slack practices to explain how these
38 practices ensure resilience according to the situation encountered and its evolution.

39 40 41 42 43 44 45 46 47 48 49 50 *Analyzing the activity through the lens of critical care situations*

51
52 After comparing the 92 situations in our sample, we identified the following five
53 characteristics of the CCU’s activity which put pressure on its resources: 1) its status as an
54 emergency unit which is operational 24/7, accepting patients with failing vital conditions;
55
56
57
58
59
60

1
2
3 2) its treatment of patients with life-threatening emergencies, which means their health can
4 changed unexpectedly; 3) the need for the CCU to handle patients promptly – particularly to
5 assess the seriousness of their condition – without putting them on hold and managing them
6 later; 4) the need for the CCU to deal with a highly variable number of admissions and to not
7 turn them away even if it is full; and 5) dependence of the CCU’s levels of activity and
8 occupancy on upstream flows (incoming patients from other hospitals or directly from
9 accidents) and downstream flows (redirecting patients to other units after emergency care).
10 Given the imperatives for action in this extreme context, our observations and the actors
11 themselves identified the availability of resources as a key factor in ensuring resilience, and
12 that having these resources in a timely manner can sometimes be a source of tension. We
13 specifically observed how actors used what they called ‘*just in case resources*’ or ‘*resources*
14 *at hand but not always used*’ to manage this tension. These ‘slack resources’ are available out
15 of the situation – in the form of resources granted to the unit – or are sometimes produced as
16 the situation unfolds.

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

26 Following Journé and Raulet-Croset (2008), we grouped the situations that we analyzed into
27 three types related to the resource pressures generated by the various situations (Table 2).
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Then, we established a correspondence between the situations and the origins of slack used in
4 these situations (cf. infra).
5
6
7
8
9

10 <Insert Table 2 about here>
11
12
13
14
15

16 Risky situations are those situations that are normal in their intensity and the number of
17 patients. Here, the context is risky but is “normal” for this kind of medical unit. Emergency
18 situations are more intense situations because of the number of patients in the unit or a
19 sudden change in a patient’s condition. Although they create resource pressures, these
20 situations are part of the unit’s expected activity and are kept under control by creating slack
21 resources when the situation occurs (situational slack). Crisis situations are a specific type of
22 emergency situation where the resilience of the organization is at risk of failure due to a lack
23 of resources or time pressures for mobilizing, reconfiguring or generating the resources.
24 These situations are very rare; only one occurrence was observed during our 14-month period
25 in the CCU and such events are widely discussed by the team because of their potential
26 consequences.
27
28
29
30
31
32
33
34
35
36
37
38
39
40

41 The peak levels of activity are generally able to be controlled using the available resources
42 (human, material or spatial) negotiated with the hospital’s administrative staff, outside the
43 timeframe of the situations we studied. However, the tension and the time pressure can
44 intensify because of the variability in the causes of the patients conditions (traffic accidents,
45 brawls, domestic accidents, etc.); the variability in the hospital activity (in-patient bed
46 occupancy); the number of patients already in the CCU and the evolution of their condition;
47 and potential transfers from other smaller hospitals for the most severe cases. These factors
48 can offset or reinforce each other, explaining why risky situations may evolve towards
49 emergency ones. The CCU’s activity therefore has a large potential for disturbance and new
50
51
52
53
54
55
56
57
58
59
60

1
2
3 resources may be required. Two kinds of events shift the risky situation to an emergency one.
4
5 The first is related to the qualitative variability in the condition of the patients, whether they
6
7 are new or already in the CCU. The other is related to the quantitative variability in the care
8
9 environment of the unit, driven by the variability in the elements listed above. By moving
10
11 from the potentiality to the realization of extreme events, the pressure on resources requires
12
13 rapid action that cannot be delayed to avoid risking patient safety.
14
15
16

17 *Slack practices in critical care situations*

18
19 To cope with the pressure on resources caused by the different situations, we observe that the
20
21 medical unit actors employ various slack practices related to human and material resources,
22
23 spatial resources and a queuing system. With regard to human and material resources, the
24
25 medical unit has a significant level of slack granted officially by the administration which can
26
27 be mobilized to treat patients. Indeed, as indicated by several actors, the CCU, as part of a
28
29 large university hospital, has access to all the hospital's material, staff and specialist medical
30
31 resources. One doctor told us: *'Here, no one has ever told me there are budget restrictions.*
32
33 *That's the advantage of this unit. We have all the resources we need. No one has told me to*
34
35 *stop at 25 packed red blood cells. If I stop, it's for medical reasons. There is no more hope.*
36
37 *Never for financial reasons'* (Physician interview).
38
39
40
41
42

43 These resources can be referred to as 'official slack' (i.e. slack that is acknowledged and
44
45 approved by the hospital administration) and they enable the risky situations, i.e. the majority
46
47 of situations encountered, to be managed despite their variability. Many of the unit's
48
49 resources for dealing with unexpected workflow are available as a result of negotiations with
50
51 the hospital administration. These negotiations relate to the resources that are necessary
52
53 between the official requirements for the hospital to respect a minimal staffing level and the
54
55 medical requirements for the optimal care of patients. The Head of the CCU illustrated this,
56
57 saying: *'The official text says, "It's 1 nurse for every 2 patients". For intensive care there is*
58
59
60

1
2
3 *no official text, there are guidelines and recommendations for intensive care and continuing*
4 *care. And that changes everything! You can go to see the hospital administration and tell*
5 *them you want these. As there is no official text they'll say, "that's all very well but show me*
6 *you need it"* (Head of CCU interview).
7
8
9
10
11

12 Beyond the budgetary negotiations, doctors – particularly the Head of the CCU – play a key
13 role in protecting slack. This requires them to participate in the hospital decision-making
14 process in order to avoid managerial drift that could affect the quality of care. Indeed, the
15 team emphasized that there is a significant distance between the frontline workers, whether
16 doctors or paramedic staff, and the hospital administration. Doctors must therefore dedicate
17 time to attending a large number of meetings to ensure that the metrics used by the
18 administration are consistent with the reality of the field, and to provide the administration
19 with an understanding of the reality in terms of quality of care and patient safety. For
20 example: *'In the performance committee, they keep talking about lean management. That's*
21 *the new big thing. You realize that the numbers they have are false. They have no idea about*
22 *the level of activity. When the metrics show there are 2,000 complete hospitalizations, for*
23 *them it's just a number. They don't have a medical view and there are errors every time. [...]*
24 *And it takes up a lot of time. [...]* The NPM [New Public Management] has transformed the
25 hospital with a huge decrease in the power of doctors. Before, the Medical Establishment
26 Commission had an important role; now, it feels like it's no longer useful. The steering
27 committee or something like that, there are 5 or 6 of them, they decide more' (Head of the
28 CCU interview).
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

51 In emergency situations, new slack practices are employed to reconfigure existing resources
52 and gather new ones. The medical team redirects the initial destination of a resource to a
53 different one. For human resources, this is achieved through team members standing close by
54 and letting their colleagues know they are there 'just in case', saying, for example: *'Do you*
55
56
57
58
59
60

1
2
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
5
6 stay in the CCU to take a step back to get an overview of the activity and be ready in case his
7
8 colleague needs him for a patient. With regard to the material resources, the most illustrative
9
10 practice involves creating a fifth bed in the TR, where there are usually only four, so that
11
12 extra patients can be absorbed when the CCU is overloaded. This is made possible by
13
14 bringing a stretcher from the PORR, taking a mobile scope and a mobile respiratory device
15
16 from the inventory room, and placing two folding screens in the middle of the TR to create
17
18 this new bed.
19
20
21
22

23
24 In addition to using the resources already in the CCU, we observed two practices to produce
25
26 slack by bringing in extra human resources from outside the medical unit. First, the unit's
27
28 medical staff has a network of relationships that extends beyond official working hours and
29
30 places. Using their personal smartphones, on-duty doctors regularly communicate with off-
31
32 duty doctors to inform them of critical situations, and the off-duty doctors regularly inquire
33
34 about the situation in the unit. Here, calls, texts or instant messaging apps (*WhatsApp*) are
35
36 common and the usual mode of communication for permanently maintaining potential
37
38 reinforcing resources. There is therefore no great compartmentalization between the CCU's
39
40 on- and off-duty doctors. There is a network of doctors in the field and others who can be
41
42 called on to be prepared and, if necessary, to assist the unit. Second, when necessary, other
43
44 human resources are also brought in from within the hospital. For example, during a night
45
46 shift, an intern or a doctor can call an additional duty doctor from a unit with a lower variance
47
48 of activity than the CCU and who can therefore intervene or be pre-mobilized when the
49
50 situation requires. The CCU team members call this resource, *'The phone-a-friend'* joker – a
51
52 joke based on the TV show *'Who Wants to Be a Millionaire?'*.
53
54
55
56
57
58
59
60

1
2
3 Furthermore, the spatial layout of the CCU and of the Emergency Centre facilitates the
4 reconfiguration of space resources because of the spatial proximity and interconnection of the
5 activity areas. As one physician explained: *'I need a bed in the post-op recovery room, but no*
6 *bed is available. OK, no problem, I will take this and that. The nurse in charge knows about*
7 *it and everything is reconfigured. It's a constant process of reconfiguration for physicians,*
8 *nurses and assistant nurses at the same time'* (Physician interview).
9

10
11
12 Reconfiguration also takes place beyond the CCU's own walls. As previously mentioned, the
13 anesthetic area of the operating rooms in the Emergency Center is managed by the
14 anesthesiologists in the same team (who work alternatively in the CCU and the operating rooms
15 and consult in the whole Emergency Center). Like the official slack for human and material
16 resources, the layout of the workspace is also subject to negotiation. The doctors fought to
17 participate in the conception of the CCU to design the spatial organization of the unit. They
18 requested a specific form of spatial organization that provided flexibility during emergency
19 activity. They favored a design where the operating rooms were on one side and the ICU was
20 on the other, which was contrary to that of rationalized organization based on the different
21 types of pathology. A nurse argued that: *'[The Head of the CCU] fought for it [the specific*
22 *layout of the unit] to be created. If she had not been there, it would not exist: the Trauma*
23 *Room next to the ICU, 15 meters from the operating rooms, and 15 meters from the medical*
24 *scans. She fought to make it that way'* (Nurse interview).
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45

46 In emergency situations, this spatial layout enables dedicated spaces to be used for other
47 purposes. Thus, the most stable patient can be moved from the TR to the PORR when all the
48 TR bays are occupied. In this way, the PORR becomes a 'Light Trauma Room' for taking
49 care of patients according to their level of severity. Linked to the human and material slack,
50 the spatial layout makes the use of resources smoother.
51
52
53
54
55
56
57
58
59
60

1
2
3 The last category of slack practices concerns the ‘queuing system’, i.e. the practices for
4 managing the flow of patients and the patients already in the CCU (‘stock’) to avoid
5 overloading the CCU. The CCU’s mission is to take care of the sickest patients whatever
6 their condition, and it cannot send patients elsewhere to create its own slack by diverting or
7 putting the flow of patients on hold. Thus, a lack of resources, specifically a lack of space in
8 the unit, is never an excuse to refuse a patient admittance. Medical criteria alone determine
9 the admittance or the refusal of a patient. To manage these important tensions, the team
10 creates slack by creating a vacant bed (TR) or room (ICU) as quickly as possible.
11 Consequently, managing the flow and the stock of patients includes making room for a
12 ‘potential new or unexpected patient’.
13
14
15
16
17
18
19
20
21
22
23
24
25

26 In emergency situations, overloading arises and challenges the ability of the CCU to deal
27 with the ‘potential new or unexpected patient’. The team’s priority is to free up space and
28 make it ready as quickly as possible to receive other potential patients. To do so, the CCU
29 doctors can increase the turnover of patients from the TR to the ICU. The patient trajectory
30 does not change but is accelerated. Doctors can also negotiate patient transfers (new transfers
31 or speed up scheduled transfers) with doctors from the other hospital units. The doctors’
32 relational network – based on their personal and professional relationships – facilitates these
33 transfers. The higher the tension around transfers, the more the relational network and the
34 ‘institutional weight’ of the doctor play an important role. This makes it more difficult for
35 interns to negotiate such places than attending physicians, who have greater negotiating
36 power. We repeatedly observed the head of the unit asking the intern or the doctor if he
37 ‘needed help to make room’.
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

54 The CCU can use the slack produced in these ways completely, partially or even not at all.
55 For example, while the creation of a fifth bed in the TR may be effective, it may not be used
56 if patient transfers free up space a few hours later. Once the situation is managed and under
57
58
59
60

1
2
3 control, situational slack is disbanded if it has not been entirely used or has been used and no
4 longer exists. Official slack is reconstituted as soon as possible (free bed in the TR or free
5 room in the ICU). After an extreme event, the CCU returns to a nominal state of a potential
6 extreme event characterizing a risky situation.
7
8
9

10
11
12 Following our analysis, we can classify these interconnected practices involved in the
13 production and use of slack into four main categories (Table 3) according to the situation and
14 the two temporalities of the local ‘here-and-now accomplishments’ and the ‘elsewhere-and-
15 then’ of other practices (Nicolini, 2009). In risky situations, the official slack is sufficient and
16 is used to absorb the flow of patients. In emergency situations, the CCU team generates a
17 surplus of resources from inside and outside the unit.
18
19
20
21
22
23
24
25
26
27

28 <Insert Table 3 about here>
29
30
31
32
33
34
35

36 In most situations, the CCU team benefits from its official slack and situational slack to
37 manage the flow and patient’s condition. However, the slack can sometimes be completely
38 used up even though the situation has not been fully managed. In such situations (referred to
39 as ‘crisis situations’ in Table 2), there are risks of failure. The difficulty in overcoming such a
40 situation and the subsequent tension in the medical unit then reach their climax. The medical
41 unit tries to bounce back as fast as possible to recover equilibrium between the resources that
42 are required and those that are available. The only such situation we observed related to the
43 immediate need for a blood warming⁶ device for an urgent and massive transfusion, but the
44
45
46
47
48
49
50
51
52
53
54

55
56
57 ⁶ Blood that is too cold and requires additional energy from the patient’s body, which – given
58 its condition – presents a major risk: cardiac arrhythmia, hypothermia.
59
60

1
2
3 device was not ready to use. After the nurse had returned with the blood warmer and started
4
5 to install it, the patient was closely monitored to make sure it was safe.
6
7

8 9 *The dynamics of slack practices*

10
11 The slack practices we identified and categorized unfold according to the situation and can be
12
13 connected dynamically and in a processual view to understand how the CCU manages the
14
15 flow of patients whatever the shocks caused by the number of patients and the severity of
16
17 cases. Official slack depends largely on negotiations about and defense of the unit. While
18
19 these practices occur at the hospital level following negotiations with the administration, they
20
21 largely influence the daily activity of the unit by giving it budgets, positions, space and
22
23 access to technical devices. Situational slack is different in that it produces extra resources or
24
25 reconfigures existing resources to deal with increasing qualitative or quantitative variability.
26
27 This production is added to the official slack absorbed in the unit and used during activity.
28
29 Organizational resilience therefore depends on the ability to mobilize excess resources in a
30
31 timely manner and according to the situation. An unpredictable situation (and its evolution)
32
33 requires almost immediate availability of unused resources – ready-to-use slack. Resilience
34
35 also requires rapidly finding a balance to get out of the crisis zone before organizational
36
37 failure takes place. The inability to manage a life-threatening emergency within the time
38
39 constraint is a rare and stressful event for team members. Even if the eventuality of death is
40
41 an integral part of the medical unit, such inability puts patient safety at risk, with potentially
42
43 fatal consequences.
44
45
46
47
48

49
50 Our approach to organizational slack led us to distinguish two roles of slack in organizational
51
52 resilience: absorbing shocks and recovering from shocks according to the requirements of the
53
54 situation (Table 4). In risky situations, official slack – available before the situation occurs –
55
56 acts as a buffer absorbing shocks from the activity of the CCU. In emergency situations, the
57
58 team actively produces situational slack and tries to recover from shocks. The analysis of
59
60

1
2
3 slack practices and situations led us to add specific circumstances that occur when a high use
4 of slack is not counterbalanced by the production of sufficient slack quickly enough. In these
5 circumstances there is a shortage of resources, which challenges the resilience and generates
6 a crisis situation. If the medical team recovers from this shortage in due time, the situation
7 becomes an emergency one, otherwise there is a failure of organizational resilience.
8
9
10
11
12
13
14
15
16

17 <Insert Table 4 about here>
18

19
20 Following our analysis, we propose a dynamic model of slack production and use according
21 to the situation and its evolution. This model links how resilience is ensured or jeopardized
22 according to the level of slack (Figure 2). We consider each patient's situation as a trajectory
23 to investigate how a situation can change suddenly and unexpectedly. Indeed, a situation
24 cannot be captured entirely by the concept of context, but rather evolves from one context to
25 another, depending on whether the extreme event is potential or real. Slack practices are
26 activated to ensure the resilience of the medical unit by producing slack in order to prevent
27 the event from 'exceed[ing] the organization's capacity' (Hannah et al., 2009: 898). We
28 therefore analyzed each situation synchronically and diachronically to understand their
29 characteristics, the corresponding slack practices, and the tipping points explaining the
30 evolution of a situation. These tipping points unfold through the shift from one management
31 mode of slack to another (Bouty and Drucker-Godard, 2019; Schakel et al., 2016).
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46

47 In risky situations, official slack is available following negotiation with the administrative
48 staff. Here, the role of the doctors is to negotiate and protect the slack. Tensions can appear in
49 an unexpected situation or if a situation becomes unstable, resulting in the occurrence of an
50 extreme event. Then, the medical unit situation shifts to an emergency one in which the
51 available slack is used if necessary and some practices produce situational slack to maintain
52 organizational resilience. If all the slack produced is used and there is still a lack of resources
53
54
55
56
57
58
59
60

1
2
3 to deal with the situation, then the unit shifts to a crisis management mode of slack. In this
4
5 specific situation, resilience is challenged, and the unit tries to bounce back to balance the
6
7 available and required resources to manage the situation. The unit gathers more human and
8
9 material resources as quickly as possible from within and outside the unit. If the additional
10
11 slack resources are sufficient to find a new balance, the unit returns to an emergency
12
13 management mode of slack. If there are not enough slack resources, then organizational
14
15 resilience may fail. According to the team, this, fortunately, is rarely observed in the unit due
16
17 to the relatively high level of absorbed slack and the ability of the medical team to produce
18
19 situational slack. As illustrated in Figure 2, the trajectories we described are not necessarily
20
21 linear and the tipping points lead to a shift from one mode of managing slack to another (e.g.
22
23 from risky to emergency or crisis mode). A risky situation can suddenly become a crisis
24
25 situation without going through an intermediate stage. In this case, the team must act
26
27 immediately and is under time pressure to gather the resources needed to deal with it. In the
28
29 figure, the most frequent tipping point is when a situation evolves from being risky to an
30
31 emergency due to a change in the patient's condition or the general situation in the unit. Once
32
33 the patient's condition is brought back under control, the situation becomes risky again.
34
35 However, the reverse relationship also exists. The team may be alerted to deal with a very
36
37 serious health condition and produces slack (emergency situation), but the actual condition
38
39 may turn out to be a risky situation and the unused situational slack is then disbanded.⁷ The
40
41 two tipping points that lead to crisis situations are similar. The difference between the two is
42
43 the lack of time required to produce situational slack when moving from a risky situation to a
44
45 crisis situation. Tipping point 2 was observed only once when a serious situation worsened
46
47 due to a lack of resources. Tipping point 3 is indicated for theoretical reasons and because we
48
49 can imagine an unanticipated severe situation where there would be insufficient official slack.
50
51
52
53
54
55
56
57

58
59 ⁷ That is why we have drawn a double-headed arrow in Figure 2.
60

1
2
3 If such a situation were to occur, it is unlikely that there would be an immediate return to the
4
5 risky situation mode.
6
7
8
9

10 <Insert Figure 2 about here>
11
12
13
14
15
16
17

18 **Discussion**

19
20 In this article, we adopted a practice perspective to provide insights on how organizational
21
22 actors manage excess resources (slack) in extreme contexts. Practice theories seek to revisit
23
24 traditional theories or concepts in organization theories or strategy to shed new light on
25
26 traditional phenomena (Feldman and Orlikowski, 2011; Korica et al., 2017; Lounsbury and
27
28 Beckman, 2015; Nicolini, 2009, 2013). By proposing the concept of slack practices and by
29
30 studying their dynamics, we hope to contribute to the HRO literature which has provided
31
32 insights into broad structural organizing principles – such as redundancy and loose coupling –
33
34 but to a lesser extent into the micro-level processes that produce reliability and resilience
35
36 (Weick et al., 1999). As Barton and Sutcliffe (2009: 1329) claim, ‘Yet, it is through micro-
37
38 level social processes that the organizational practices that contribute to safety are enacted’.
39
40
41
42

43 Our 14-month ethnographic study in a French CCU enabled us to observe and analyze the
44
45 role and deployment of slack in risky and emergency contexts (Hällgren et al., 2018), where
46
47 reliability is a crucial organizational goal. We focused on slack as an important mechanism of
48
49 organizational resilience, which, although often examined in the HRO literature at the
50
51 structural and organizational levels (Vogus and Sutcliffe, 2007), is understudied at the
52
53 situational level. Of course, the medical unit in our study – like the medical sector in general
54
55 (Carroll and Rudolph, 2006) – also employs other HRO mechanisms and practices to ensure
56
57 reliability. These include deference to and reliance on expertise and competence, importance
58
59
60

1
2
3 of routines, collective training and permanent learning from experience. We, therefore, do not
4 suggest that slack is the sole necessary condition for maintaining a reliable production
5 process. Instead, alongside other reliability mechanisms, we argue that it contributes
6
7 importantly to resilience. To conclude, this study offers two main avenues for discussion.
8
9
10
11

12
13 *Theoretical implications: Slack practices, situations and contexts*
14

15
16 Our concept of slack practices insists not only on the use of slack resources according to the
17 development of the situation but also on the production of these resources in action. While
18 the literature on slack has traditionally downplayed the production side in favor of studying
19 the organizational effects of *having* slack at the organizational level of analysis, situated
20 observations encourage reasoning both in terms of stock and flow. According to the evolution
21 of the situation, individuals not only use the slack they and their organization have produced
22 ‘out there’ but also produce slack during action. This view of slack as resulting continuously
23 from a stock and flows contrasts with the view of slack only as a stock in an entity-based
24 paradigm (e.g. Feldman and Orlikowski, 2011; Hernes, 2008; Lindberg and Rantatalo, 2015).
25
26 In this article, we argue that slack practices depend on the context, as demonstrated in several
27 studies on coordination that use the practice lens (e.g. Bouty and Drucker-Godard, 2019;
28 Faraj and Xiao, 2006; Schakel et al., 2016). In a risky context, slack acts as a cushion to
29 absorb potential shocks, such as the sudden arrival of several critical patients. In an
30 anticipatory approach to resilience, organizational actors must expect the unexpected,
31 deploying slack practices ‘out there’ (Nicolini, 2009), i.e. essentially by negotiating with the
32 hospital’s administration. These negotiations about the excess resources absorbed in the unit
33 concern staff, the configuration of space or equipment. Although we label this slack as
34 ‘official’, to differentiate it from situational slack, it requires a high level of regular
35 involvement in administrative and budgetary negotiations to obtain more resources than are
36 required by the average level of activity. While this slack may appear as a given, it is only
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 obtained through sustained efforts by the medical staff outside the unit. These resources
4
5 constitute a potential stock that is recoverable, and which is deployed according to the
6
7 situation being faced. These slack practices do not depend on specific situations but are
8
9 aimed at fulfilling the unit's general mission.
10

11
12 Our observations show that this negotiated slack is generally sufficient and that the design of
13
14 the technological and human systems is adapted to the unit's mission. But, unlike Hällgren et
15
16 al. (2018), who tend to reify the context, we argue that these slack practices are constitutive
17
18 of the risky context as they enable the deviations in the activity to be kept under control. It is
19
20 *because* slack has been negotiated out of the flow of patients that the context remains risky
21
22 and does not always switch to an emergency context. By taking a practice perspective, we
23
24 avoid any reification of the context (i.e. risky or emergency *per se*) and consider it in relation
25
26 to the practices involved. From this perspective, and from the point of view of slack practices,
27
28 the context becomes one of emergency when the negotiated slack is found to be temporarily
29
30 insufficient. Indeed, contexts do not represent a stabilized state of the world. As we
31
32 demonstrated through our CCU observations, they can evolve from a risky to an emergency
33
34 context – eventually becoming a crisis situation – when potential disruptions *in the situations*
35
36 take effect, i.e. when the production of slack is overwhelmed by the requirements of the
37
38 situation. This can happen for qualitative or quantitative reasons which create tipping points
39
40 in the situations. Then, new slack practices occur to produce situational slack. We can sum up
41
42 our observations by arguing theoretically that the situation commands the context and,
43
44 consequently, that changing contexts are a recurrent and habitual characteristic of the activity
45
46 because situations evolve. These recurrent switches between contexts and situations
47
48 correspond to the complexity of the world (Tsoukas, 2017).
49
50
51
52
53
54
55
56

57 *Implications for practice: Why New Public Management endangers resilience*
58
59
60

1
2
3 A second point of discussion relates to the debate in the literature about the form, level and
4 relationship of slack with performance. For some authors, unabsorbed or available slack
5 (Bourgeois and Singh, 1983; Singh, 1986) (i.e. not ingrained or incorporated in the
6 organizational working activities, typically cash and receivables) gives organizations a high
7 level of discretion and may ultimately ensure adaptability at the organizational level. Due to
8 the potential discretionary use of these resources (George, 2005), slack can initiate change in
9 organizations (Zajac et al., 1991), including innovation (Herold et al., 2006; Nohria and
10 Gulati, 1996, 1997; Singh, 1986; Slappendel, 1996), opportunity exploration (Argilés Bosch
11 et al., 2016) and risk-taking (Bromiley, 1991; Nohria and Gulati, 1997; Singh, 1986). The
12 context of our case – and of HROs more generally – is fundamentally different to the context
13 traditionally studied in the literature on slack (i.e. mostly firms) and demonstrates that the
14 flexibility attributed to unabsorbed slack does not hold true in extreme contexts. Indeed, the
15 mission of the unit we observed is to save lives and requires reliability to be ensured in
16 rapidly changing contexts. As we have seen, what partly guarantees this reliability is the
17 absorbed slack, i.e. the resources absorbed in the daily practices of the professionals or the
18 design of the organizational system (Bourgeois and Singh, 1983). But this slack generates, in
19 parallel, excess costs. This means that the unit ensures the achievement of its mission by not
20 being entirely concerned with efficiency. This raises the issue of the levels of slack in the
21 context of French hospitals and many public sectors around the world.

22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47 Because of its high discretionary dimension, slack can have ambivalent organizational
48 effects. While some of the organizational literature considers slack to have positive effects,
49 from an agency theory perspective it also gives organizations and individuals latitude to relax
50 controls and to pursue risky projects with uncertain outcomes (George, 2005; March and
51 Shapira, 1987; Nohria and Gulati, 1996; Williamson, 1963). This conception corresponds to
52 the ‘contractualist’ view promoted by New Public Management (NPM) in the public sector
53
54
55
56
57
58
59
60

1
2
3 and its basic focus on efficiency (Lane, 2002). NPM puts greater emphasis on parsimony in
4 the use of resources and encourages finding cheaper ways to deliver public services, doing
5 more with less, and making standards of performance more explicit and measurable (e.g.
6 Hood, 1995; Hood and Jackson, 1991). NPM and its efficiency logic raises serious issues for
7 the public sector as it introduces and brings to the fore economic criteria in organizations
8 whose performance criteria are not economic (Hollnagel et al., 2009). For example, a group
9 of French military experts recently pointed out that ‘economic concern with defense, let’s say
10 efficiency, is a recent idea. This idea contrasts with military concepts such as “available
11 reserves”, “redundancy” and “higher-powered force”, which are necessary for operational
12 efficacy and what is today called resilience (...)’ (La Tribune, 27/04/2020).⁸ The potential
13 deleterious or counterproductive effects of NPM, especially in hospitals have been
14 highlighted by several studies (Simonet, 2014). The principles of NPM may contradict the
15 ethos of public agents dedicated to the public good – such as health – demotivate them and
16 reduce their commitment (Williams et al., 2012). The managerialism that accompanies NPM
17 may lead to worry, anxiety and distress among employees (Chandler et al., 2002), and some
18 reforms may lead to exactly the opposite of the intended outcomes, such as the ‘queue
19 billion’ in Sweden, which induced bad practices (Hansson, 2014). While HROs must
20 emphasize reliability over efficiency (Casler, 2014; Hood and Jackson, 1991; La Porte and
21 Consolini, 1991; Roberts et al., 2004), the NPM focus on cost efficiency tends to suppress
22 slack. As Karlene H. Roberts concludes, ‘when organizations are under scrutiny for cost
23 control often the first two things to go are slack (which allows for redundancy) and training.
24 Both contribute to reliability enhancement’ (Bourrier, 2005: 95).

25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
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.

1
2
3 In the general context of the diffusion of NPM across most OECD countries since the 1980s,
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

1
2
3 danger in an institutional context that promotes NPM and where these practices are vital for
4 ensuring the mission of a public organization in which reliability is the main criterion for
5 saving lives. In this context, protecting and negotiating slack depends on the ability of actors
6 to justify what may appear to be wasted and unproductive resources and non-visible
7 processes (Casler, 2014: 240).
8
9

10
11
12 The role of strong leadership at the head of such organizations and the 'coalition-forming
13 activities' in an organization (Bourgeois and Singh, 1983) therefore appear to be crucial for
14 decoupling – at least partially – the tendency towards managerialism and the 'real' work
15 activity (Doolin, 2001). Although we have not explored these specific issues, it could be
16 important to study more deeply how actors negotiate slack within the hospital as well as
17 outside the hospital because the hospital's administrative hierarchy is itself under the NPM
18 rules of administrative supervision. In this general context, various power relationships
19 constitute an alternative hypothesis for obtaining more slack resources. As Cyert and March
20 (1963) asserted, slack is distributed differentially within organizations, suggesting that some
21 actors may obtain a greater share of the slack than others according to their power.
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39

40 **Acknowledgements**

41
42 **The authors are very grateful to Dr Timothy Kuhn and the three reviewers of the**
43 **article for their meticulous reading. They provide very helpful comments and**
44 **constructive feedbacks on earlier versions, which contributed to improve significantly**
45 **the manuscript..**
46
47
48
49
50
51

52 **Funding**

53
54
55
56
57
58
59 There are no funders to report for this submission.
60

References

- Adler PA and Adler P (1987) *Membership Roles in Field Research*. Sage Publications London.
- Adler PA and Adler P (2012) Keynote address tales from the field: Reflections on four decades of ethnography. *Qualitative Sociology Review* 8(1): 10–32.
- Almklov PG and Antonsen S (2014) Making Work Invisible: New Public Management and Operational Work in Critical Infrastructure Sectors: NPM and Operational Work in Critical Infrastructure Sectors. *Public Administration* 92(2): 477–492.
- Argilés Bosch JM, García Blandón J and Martínez Blasco M (2016) The impact of absorbed and unabsorbed slack on firm profitability: Implications for resource redeployment. *Advances in Strategic Management* 35: 371–395.
- Barley SR (1990) Images of imaging: Notes on doing longitudinal field work. *Organization science* 1(3): 220–247.
- Barton MA and Sutcliffe KM (2009) Overcoming dysfunctional momentum: Organizational safety as a social achievement. *Human Relations* 62(9): 1327–1356.
- Beaud S and Weber F (2010) *Guide de l'enquête de Terrain*. 4e Éd. La Découverte.
- Bechky BA and Okhuysen GA (2011) Expecting the unexpected? How SWAT officers and film crews handle surprises. *Academy of Management Journal* 54(2): 239–261.
- Becker HS and Geer B (1957) Participant observation and interviewing: A comparison. *Human Organization* 16(3): 28–32.
- Bourgeois LJ (1981) On the measurement of organizational slack. *Academy of Management Review* 6(1): 29.
- Bourgeois LJ and Singh JV (1983) Organizational slack and political behavior among top management teams. In: *Academy of Management Proceedings*, 1983, pp. 43–47. Academy of Management.

- 1
2
3 Bourrier M (2005) An interview with Karlene Roberts. *European Management Journal* 23(1):
4
5 93–97.
6
7
8 Bouty I and Drucker-Godard C (2019) Managerial work and coordination: A practice-based
9
10 approach onboard a racing sailboat. *Human Relations* 72(3): 565–587.
11
12
13 Bromiley P (1991) Testing a causal model of corporate risk taking and performance. *Academy*
14
15 *of Management Journal* 34(1): 37–59.
16
17
18 Carroll JS and Rudolph JW (2006) Design of high reliability organizations in health care.
19
20 *BMJ Quality & Safety* 15(Suppl. 1): 4–9.
21
22 Casler JG (2014) Revisiting NASA as a High Reliability Organization. *Public Organization*
23
24 *Review* 14(2): 229–244.
25
26
27 Chandler J, Barry J and Clark H (2002) Stressing academe: The wear and tear of the new
28
29 public management. *Human relations* 55(9): 1051–1069.
30
31
32 Cunliffe AL (2010) Retelling tales of the field: In search of organizational ethnography 20
33
34 years on. *Organizational Research Methods* 13(2): 224–239.
35
36
37 Cyert RM and March JG (1963) *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ:
38
39 Prentice-Hall.
40
41
42 Czarniawska B (2004) On time, space, and action nets. *Organization* 11(6). Sage Publications
43
44 Sage CA: Thousand Oaks, CA: 773–791.
45
46
47 Daniel F, Lohrke FT, Fornaciari CJ, et al. (2004) Slack resources and firm performance: a
48
49 meta-analysis. *Journal of Business Research* 57(6): 565–574.
50
51
52 De Rond M and Lok J (2016) Some things can never be unseen: The role of context in
53
54 psychological injury at war. *Academy of Management Journal* 59(6): 1965–1993.
55
56
57 Desailly-Chanson M, Siahmed H and Elshoud-Igaenr S (2016) *Risques psychosociaux des*
58
59 *personnels médicaux: recommandations pour une meilleure prise en charge*. Paris
60 (France): Inspection Générale des Affaires Sociales (IGAS).

- 1
2
3 Dixon-Woods M, Leslie M, Bion J, et al. (2012) What counts? An ethnographic study of
4 infection data reported to a patient safety program. *Milbank Quarterly* 90(3): 548–591.
5
6
7 Doolin B (2001) Doctors as managers-new public management in a new zealand hospital.
8
9
10 *Public Management Review* 3(2): 231–254.
11
12 Eisenhardt KM (1989) Building theories from case study research. *Academy of Management*
13
14 *Review* 14(4): 532–550.
15
16 Faraj S and Xiao Y (2006) Coordination in Fast-Response Organizations. *Management*
17
18 *Science* 52(8): 1155–1169.
19
20
21 Feldman M and Worline M (2016) The practicality of practice theory. *Academy of*
22
23 *Management Learning & Education* 15(2): 304–324.
24
25
26 Feldman MS (2004) Resources in emerging structures and processes of change. *Organization*
27
28 *Science* 15(3): 295–309.
29
30
31 Feldman MS and Orlikowski WJ (2011) Theorizing practice and practicing theory.
32
33 *Organization Science* 22(5): 1240–1253.
34
35
36 Feldman MS and Worline M (2011) Resourcefulness. In: Cameron KS and Spreitzer GM
37
38 (eds.) *Oxford Library of Psychology. The Oxford Handbook of Positive*
39
40 *Organizational Scholarship*, pp. 629–641.
41
42
43 George G (2005) Slack resources and the performance of privately held firms. *Academy of*
44
45 *Management Journal* 48(4): 661–676.
46
47
48 Gherardi S (2012) *How to Conduct a Practice-Based Study: Problems and Methods*. Edward
49
50 Elgar Publishing.
51
52
53 Girin J (2011) Empirical analysis of management situations: Elements of theory and method.
54
55
56
57
58
59
60

- 1
2
3 Hällgren M, Rouleau L and de Rond M (2018) A Matter of Life or Death: How Extreme
4
5 Context Research Matters for Management and Organization Studies. *Academy of*
6
7 *Management Annals* 12(1): 111–153.
8
9
10 Hannah ST, Uhl-Bien M, Avolio BJ, et al. (2009) A framework for examining leadership in
11
12 extreme contexts. *The Leadership Quarterly* 20(6): 897–919.
13
14
15 Hansson SO (2014) Medical ethics and new public management in sweden. *Cambridge*
16
17 *Quarterly of Healthcare Ethics* 23(3): 261–267.
18
19
20 Hernes T (2008) *Understanding Organization as Process: Theory for a Tangled World*.
21
22 London: Routledge.
23
24 Herold DM, Jayaraman N and Narayanaswamy C (2006) What is the relationship between
25
26 organizational slack and innovation? *Journal of Managerial Issues* 18(3): 372–392.
27
28
29 Hollnagel E, Journé B and Laroche H (2009) Reliability and resilience as dimensions of
30
31 organizational performance. *M@n@gement* 12(4): 224–229.
32
33
34 Hood C (1995) The “new public management” in the 1980s: Variations on a theme.
35
36 *Accounting, organizations and society* 20(2–3): 93–109.
37
38
39 Hood C and Jackson M (1991) The new public management: a recipe for disaster? *Canberra*
40
41 *Bulletin of Public Administration* 64: 16–24.
42
43
44 Jack EP and Raturi A (2002) Sources of volume flexibility and their impact on performance.
45
46 *Journal of operations management* 20(5). Elsevier: 519–548.
47
48
49 Jack EP and Raturi AS (2003) Measuring and comparing volume flexibility in the capital
50
51 goods industry. *Production and operations management* 12(4): 480–501.
52
53
54 Journé B (2005) Étudier le management de l'imprévu : méthode dynamique d'observation in
55
56 situ. *Finance Contrôle Stratégie* 8(4): 63–91.
57
58
59
60

- 1
2
3 Journé B (2012) Collecter les données par l'observation. In: *Méthodologie de La Recherche*
4
5 *En Sciences de Gestion : Réussir Son Mémoire Ou Sa Thèse*. Paris: Pearson
6
7 Education, pp. 165–206.
8
9
10 Journé B and Raulet-Croset N (2008) The concept of situation: Contribution to the analysis of
11
12 managerial activity in ambiguous and uncertain contexts. *M@n@gement* 11(1): 27–
13
14 55.
15
16
17 Korica M, Nicolini D and Johnson B (2017) In search of 'managerial work': Past, present and
18
19 future of an analytical category. *International Journal of Management Reviews* 19(2):
20
21 151–174.
22
23
24 La Porte TR and Consolini P (1991) Working in practice but not in theory: theoretical
25
26 challenges of 'High Reliability Organizations'. *Journal of Public Administration*
27
28 *Research and Theory* 1(1): 19–47.
29
30
31 Lane JE (2002) *New Public Management: An Introduction*. London: Routledge.
32
33
34 Leslie M, Paradis E, Gropper MA, et al. (2014) Applying ethnography to the study of context
35
36 in healthcare quality and safety. *BMJ Quality & Safety* 23(2): 99–105.
37
38
39 Lindberg O and Rantatalo O (2015) Competence in professional practice: A practice theory
40
41 analysis of police and doctors. *Human Relations* 68(4): 561–582.
42
43
44 Lounsbury M and Beckman CM (2015) Celebrating organization theory. *Journal of*
45
46 *Management Studies* 52(2): 288–308.
47
48
49 Madsen P, Desai V, Roberts KH, et al. (2006) Mitigating hazards through continuing design:
50
51 The birth and evolution of a pediatric intensive care unit. *Organization Science* 17(2):
52
53 239–248.
54
55
56 Manikas AS and Patel PC (2016) Managing sales surprise: The role of operational slack and
57
58 volume flexibility. *International Journal of Production Economics* 179: 101–116.
59
60

- 1
2
3 March JG and Shapira Z (1987) Managerial perspectives on risk and risk taking. *Management*
4
5 *science* 33(11): 1404–1418.
6
7
8 Marlin D and Geiger SW (2015) The organizational slack and performance relationship: a
9
10 configurational approach. *Management Decision* 53(10): 2339–2355.
11
12
13 Merchant KA (1985) Budgeting and the propensity to create budgetary slack. *Accounting,*
14
15 *Organizations and Society* 10(2): 201–210.
16
17 Meyer AD (1982) Adapting to environmental jolts. *Administrative Science Quarterly* 27(4):
18
19 515–537.
20
21
22 Miettinen R, Samra-Fredericks D and Yanow D (2009) Re-turn to practice: An introductory
23
24 essay. *Organization studies* 30(12): 1309–1327.
25
26
27 Nicolini D (2009) Zooming in and out: Studying practices by switching theoretical lenses and
28
29 trailing connections. *Organization Studies* 30(12): 1391–1418.
30
31
32 Nicolini D (2011) Practice as the site of knowing: Insights from the field of telemedicine.
33
34 *Organization Science* 22(3): 602–620.
35
36 Nicolini D (2013) *Practice Theory, Work, and Organization: An Introduction*. OUP Oxford.
37
38 Nicolini D and Monteiro P (2017) The practice approach: For a praxeology of organisational
39
40 and management studies. In: Langley A and Tsoukas H (eds.) *The Sage Handbook of*
41
42 *Process Organization Studies*, pp. 110–126.
43
44
45 Nohria N and Gulati R (1996) Is slack good or bad for innovation? *Academy of Management*
46
47 *Journal* 39(5): 1245–1264.
48
49
50 Nohria N and Gulati R (1997) What is the optimum amount of organizational slack?: A study
51
52 of the relationship between slack and innovation in multinational firms. *European*
53
54 *Management Journal* 15(6): 603–611.
55
56
57 Orlikowski WJ (1996) Improvising organizational transformation over time: A situated
58
59 change perspective. *Information Systems Research* 7(1): 63–92.
60

- 1
2
3 Orlikowski WJ (2010) The sociomateriality of organisational life: Considering technology in
4
5 management research. *Cambridge Journal of Economics* 34(1): 125–141.
6
7
8 Paeleman I and Vanacker T (2015) Less is more, or not? On the interplay between bundles of
9
10 slack resources, firm performance and firm survival. *Journal of Management Studies*
11
12 52(6): 819–848.
13
14 Perrow C (1984) *Normal Accidents: Living with High Risk Systems*. New York: Basic Books.
15
16
17 Pfeffer J and Salancik G (1978) *The External Control of Organizations: A Resource*
18
19 *Dependence Perspective*. New York: Harper & Row.
20
21
22 Powley EH (2009) Reclaiming resilience and safety: Resilience activation in the critical
23
24 period of crisis. *Human relations* 62(9): 1289–1326.
25
26
27 Reckwitz A (2002) Toward a theory of social practices: A development in culturalist
28
29 theorizing. *European Journal of Social Theory* 5(2): 243–263.
30
31
32 Roberts KH (1990) Some characteristics of one type of high reliability organization.
33
34 *Organization Science* 1(2): 160–176.
35
36
37 Roberts KH, Yu K and Van Stralen D (2004) Patient safety is an organizational systems issue:
38
39 Lessons from a variety of industries. In: Youngblood B and Hatlie M (eds.) *Handbook*
40
41 *on Patient Safety*. Jones and Bartlett Publishers, Inc, pp. 169–186.
42
43
44 Roberts KH, Madsen P, Desai V, et al. (2005) A case of the birth and death of a high
45
46 reliability healthcare organisation. *Quality and Safety in Health Care* 14(3): 216–220.
47
48
49 Sandberg J and Dall’Alba G (2009) Returning to Practice Anew: A Life-World Perspective.
50
51 *Organization Studies* 30(12): 1349–1368.
52
53
54 Sandberg J and Tsoukas H (2011) Grasping the logic of practice: Theorizing through practical
55
56 rationality. *Academy of Management Review* 36(2): 338–360.
57
58
59 Schakel J-K, van Fenema PC and Faraj S (2016) Shots fired! Switching between practices in
60
61 police work. *Organization Science* 27(2): 391–410.

- 1
2
3 Schatzki T (2001) Introduction : Practice Theory. In: Schatzki T, Knorr Cetina K, and von
4 Savigny E (eds.) *The Practice Turn in Contemporary Theory*. London: Routledge, pp.
5 1–14.
6
7
8
9
10 Schatzki TR (2005) Peripheral vision: The sites of organizations. *Organization studies* 26(3):
11 465–484.
12
13
14 Schulman PR (1993) The negotiated order of organizational reliability. *Administration &*
15 *Society* 25(3): 353–372.
16
17
18
19 Sgourev SV and van Lent W (2017) When too many are not enough: Human resource slack
20 and performance at the Dutch East India Company (1700–1795). *Human Relations*
21 70(11): 1293–1315.
22
23
24
25
26 Simonet D (2014) Assessment of new public management in health care: the French case.
27 *Health Research Policy and Systems* 12(1). Springer: 57.
28
29
30
31 Singh JV (1986) Performance, slack, and risk taking in organizational decision making.
32 *Academy of Management Journal* 29(3): 562–585.
33
34
35
36 Slappendel C (1996) Perspectives on innovation in organizations. *Organization Studies* 17(1):
37 107–129.
38
39
40 Sutcliffe KM and Vogus TJ (2003) Organizing for resilience. In: Cameron KS, Dutton JE, and
41 Quinn RE (eds.) *Positive Organizational Scholarship: Foundations of a New*
42 *Discipline*. San Francisco, CA, Berrett-Koehler, pp. 94–110.
43
44
45
46
47 Tamuz M and Thomas EJ (2006) Classifying and interpreting threats to patient safety in
48 hospitals: insights from aviation. *Journal of Organizational Behavior* 27(7): 919–940.
49
50
51
52 Tsoukas H (2017) Don't simplify, complexify: From disjunctive to conjunctive theorizing in
53 organization and management studies. *Journal of Management Studies* 54(2): 132–
54 153.
55
56
57
58
59
60

- 1
2
3 Tsoukas H and Chia R (2002) On organizational becoming: Rethinking organizational
4 change. *Organization Science* 13(5): 567–582.
5
6
7
8 Vogus TJ and Sutcliffe KM (2007) Organizational resilience: towards a theory and research
9 agenda. In: *IEEE International Conference on Systems, Man and Cybernetics*, 2007,
10 pp. 3418–3422.
11
12
13
14 Weick KE and Sutcliffe K (2007) *Managing the Unexpected: Resilient Performance in an*
15 *Age of Uncertainty*. Edition Jossey-Bass Inc.
16
17
18
19 Weick KE, Sutcliffe KM and Obstfeld D (1999) Organizing for High Reliability : Processes
20 of Collective Mindfulness. In: Sutton RS and Staw BM (eds.) *Research in*
21 *Organizational Behavior*. Stanford: Jai Press, pp. 81–123.
22
23
24
25
26 Williams HM, Rayner J and Allinson CW (2012) New public management and organisational
27 commitment in the public sector: testing a mediation model. *The International Journal*
28 *of Human Resource Management* 23(13): 2615–2629.
29
30
31
32
33 Williamson OE (1963) A model of rational managerial behavior. In: Cyert RM and March JG
34 (eds.) *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall, pp. 237–
35 252.
36
37
38
39
40 Zajac EJ, Golden BR and Shortell SM (1991) New organizational forms for enhancing
41 innovation: The case of internal corporate joint ventures. *Management Science* 37(2):
42 170–184.
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Biographies

Geoffrey Leuridan is Assistant Professor of Management and Strategy at IMT Atlantique, France. He is a member of the RESOH (Research in Human and Organizational Safety) Chair. His research focuses on organizational resilience in extreme contexts and human & organizational factors of industrial safety. [Email: geoffrey.leuridan@imt-atlantique.fr]

Benoît Demil is Professor of Strategic Management and Organizational Theories at the University of Lille, France. His research spans business models, historical approaches, organizational resilience and aims at developing an entrepreneurial view of strategy. He has published in national and international academic journals such as Organization Studies, Strategic Entrepreneurship Journal, Strategic Management Journal, Long Range Planning and M@n@gement [Email: benoit.demil@univ-lille.fr]

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

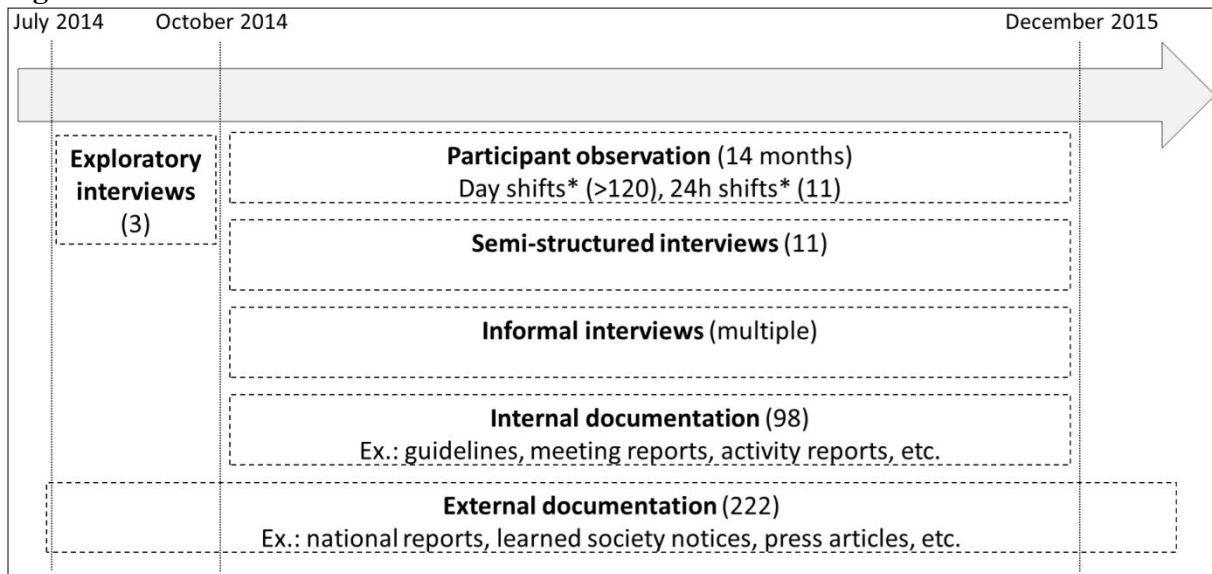
| | In the unit | Outside the unit |
|----------------------------|---|---|
| Risky situation | <p>Queuing system Managing flow/stock of patients to make room vacant ASAP</p> <p>Use of official slack</p> <p>Reconstituting official slack Free bed in the TR or free room in the ICU</p> | <p>Human and material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

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 | $So + Ss < Sr$ (<i>resource shortage</i>) | Recovering | Out of the situation Situational | 1 |

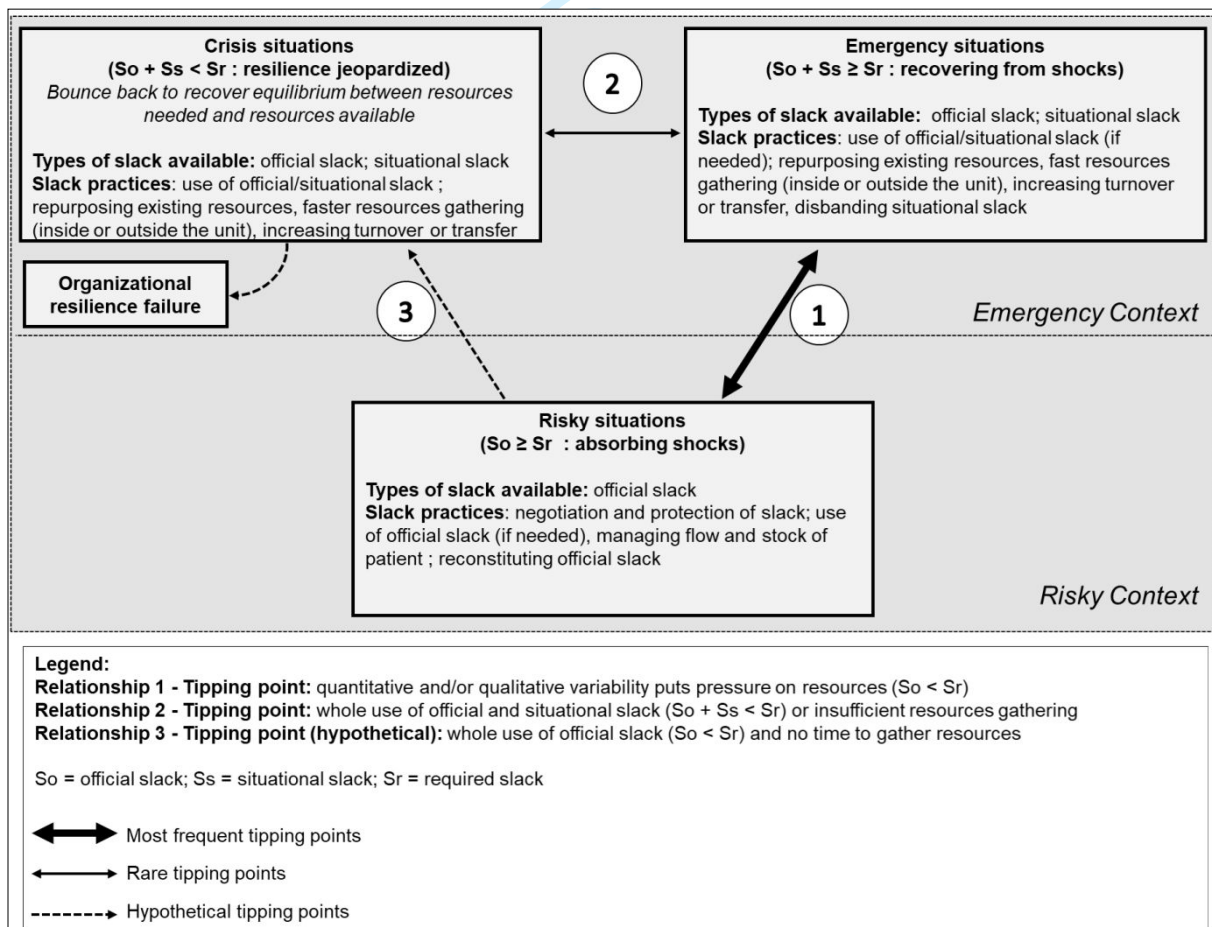
Legend: So: official slack; Ss: situational slack; Sr: required slack

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



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Peer Review Version