

The stratified and dialectical anatomy of organizational resilience

Tor Olav Grøtan¹

¹ SINTEF Technology and Society, Safety Research , Trondheim, Norway

tor.o.grotan@sintef.no

Abstract. The term Organizational Resilience (OR) signifies an attempt to organize a concerted and collaborative engagement throughout a heterogeneous, diversified and complex organization, with the purpose of mobilizing a joint coping ability of systemic proaction, denoted resilience. OR is organizationally embedded in activities with other (and different) purposes, and these are dispersed and even fragmented. Still, OR signifies an organized activity and a strategic intent. Maintaining these premises for OR is particularly urgent in “outsourced” industrial contexts.

The paper argues that in order to grasp the anatomy of OR, we have to look behind the “rational facade” (Weick, 2009) of organizations. The paper sketches out some assumptions on the anatomy of resilience on these premises. It does not purport to provide anything more than heuristic, actionable knowledge, and maintains that no more is actually possible. A founding premise for the discussion in the paper is the assumption that resilience will manifest as episodic adaptations comprising clusters of potentially dispersed activities, each of which related to different organizational strata, the relations between strata positioned in a dialectical field of prescription vs practice.

1 INTRODUCTION

1.1 Key challenges of organizational resilience (OR)

The term *organizational resilience* (OR) signifies an attempt to organize a concerted and collaborative engagement throughout a heterogeneous, diversified and complex organization, with the purpose of mobilizing a joint ability of coping and systemic proaction (that is, resilience). OR is however not a kind of resilience that can be left to its own devices at some “sharp” end, it is a collective endeavor and mobilization across organizational strata that also will have to include (safety) management actors and contexts that more than often are rather preoccupied with the very antithesis to resilience, namely compliance (compliance, compliance...).

The type of organizations addressed here are not limited to the stable and recognizable

kinds. The paper aspires for a theory of OR that also accommodates more “fluid” organizational composites with more or less durable and well-defined boundaries and interactions. Maintaining such premises for OR is particularly urgent in “outsourced” industrial contexts, e.g. in which an operator oil company wants to enforce and maintain a strategic intent of resilience on behalf of a total system comprising (sub-) contractors, suppliers and vendors.

Presuming that OR cannot be unilaterally “engineered into” an organizational context lacking any prior resemblance of or sensitivity to resilience, OR cannot be instantly measured or observed as a continuous activity. OR is praxis, something that organizational agents do. Resilient praxis is however *organizationally embedded* in activities with other (and different) purposes. Still, OR signifies an *organized* activity reflecting a deliberate *strategic intent* that distinguishes it from ecological or other forms of “natural” resilience. Any realistic strategic intent is however tempered by the fact that its achievements are not always resultant, but also emergent.

1.2 Looking behind the organizational facades of rationality

In safety research in general, a Man-Technology-Organization (MTO) perspective in various forms is increasingly being applied in order to grasp a “full”, holistic picture for investigative or preventive purposes. In which, the “organizational” level is rather habitually and ritually ascribed the role of constraining and complementing the contributions from technical and human “factors” to orderliness and thus safety. The “organizational” thus signifies something beyond what individual actors do, as a sort of common constitution or overall context for all activity within defined boundaries.

LeCoze (2005) assert that technical and human factor studies can have a fruitful focus on cause-effect relationships close in time and space to accident sequences, while organizational studies focusing on *normal* operations are extremely difficult when investigators are looking for something that is not as clear as it is after an accident. Without the accident, the clues to follow are fuzzier – and in the worst case lacking. In that respect, it may be added that concepts like practical drift, normalization of deviance and functional resonance are powerful metaphors to explain and understand organizational failure retrospectively, but are very difficult to spot in action, in terms of their preventive effect. Størseth and Grøtan (2011) draw on the premise of the “impermanent” organizations (Weick, 2009) to challenge the view that if an accident or incident investigation reveals an “imperfect” organization, the accident/incident is too easily attributed to this breach. Instead it is asked; is the organization actually “working” as imagined when failure do not happen, or is it something else that “keeps it together”? OR, as framed in this paper, is in that respect within the scope of an “elusive safety” constituted by the “dynamic non-event” (Weick & Sutcliffe 2001, p30).

To paraphrase Weick (2001), a quest for coordinated OR patterns within organizational boundaries must hence go behind the use of *rationality as a facade* in terms of talk about goals, planning, intentions and analysis. By implication, research on OR thus cannot assume organizations to comprise actors as more unified than they actually are, operating in more homogeneous environments than actually exist, and capable of longer lines of uninterrupted action than they in fact can mobilize. Neither resilience can thus

be unmasked by looking back on prior events once we know their outcome, and then “seeing” an orderliness and inevitability that suggests that the events unfolded in a rational manner and could be managed by a simple application of rationality. This is not to claim that rational order does not exist at all. Small, subtle pockets of order occur in several places, and reside in timing, participation, ideology, language, shared images, overlapping individual goals, stable a priori preferences, and consistent (or even biased) environments. Such orders may even be found in unexpected places, and any temptation to “tighten” up something that seems unordered could undo the structure and order that actually is there.

1.3 Can resilient action(s) be distinguished from other actions?

Safety barriers and similar safeguards can be implemented as contextual constraints, or as formalized/coercive checkpoints embedded in daily work (procedures, routines). This strategy can be extended to cover (e.g.) acts of critical interpretation of information, and be conditioned by (have contingency in) decision processes at various decision loci in organizations. As pointed out by LeCoze (2005) however, the task of separating “the organizational” is not trivial. Scientific findings will however be inevitably colored by what Weick (2001:176) denote *enactment*. That is, the disturbing as well as soothing fact of life that researchers no less than lay people act their way into explanation. Enactment brackets something to be made sensible which means that people are inextricably part of the data they puzzle over. The placement of enactment near the beginning of sensemaking imparts an “action bias” to any attempt to explain the not-yet-happened accident. It may thus be argued that this is why “MTO” studies will continue unabated despite any strength of LeCoze’s argument.

The implication of LeCoze’s argument is however even more profound for resilience, as resilience is targeted at surprising events and circumstances, and existing adaptive practices of a more elusive and tacit nature. Taking enactment as a premise, it could equally well be claimed that any search for resilience will also “suffer” from (inert) enactment. That is, it will find just what the (re)searchers has enacted into the subject matter, namely resilience. This paper will proceed with the inherent risk of doing just that. The motivation is primarily that this specific enactment presents itself as more feasible than the idealized “rational facades” when it comes to how people actually make decisions and perform cognitively complex functions in demanding situations, including situations marked by time pressure, uncertainty, vague goals, high stakes, team and organizational constraints, changing conditions, and varying amounts of experience.

1.4 Scope of this paper

The paper outlines some positions that can contribute to a theoretical understanding of some necessary, but not sufficient, conditions for OR to materialize. It does not purport to provide anything more than heuristic, actionable knowledge, and will maintain that no more is actually possible. It will however be argued that the challenge of incorporating external contractors etc into the strategic intent of OR (“inter-OR”) of (e.g.) an operating oil company, is just a mirror of the very challenge of “intra-OR” within the perimeters of a complex single organization/company.

2 EPISODIC ADAPTATIONS

We can assume that resilience will manifest as episodic adaptations comprising clusters of potentially dispersed activities. Each contributor is constrained in terms of available resources, time and other constituents of the (naturalistic) decision processes embedded in various organizational contexts. Episodic acts of adaptation do not require more than “pockets” of order, and are thus not reliant of the aforementioned “rational facades”.

2.1 Basic inventory of episodic adaptations

Størseth et al. (2010) explored how elements of resilience could contribute to early recovery of high risk incidents. Based on theoretical studies, resilience was operationalized as three ‘Contributing Success Factors’ (CSFs), each with their own set of sub-dimensions.

According to Størseth and Grøtan (2011), CSF operationalization is based on the underlying principle that resilience is about interaction and interchange between (organizational) layers, levels and focal points. A preliminary empirical testing of the CSFs were conducted as a series of interviews focusing on recovery of high-risk incidents in the offshore petroleum industry (Størseth et al., 2010). This study emphasized the need to allow these “inter-level resilience jumps”, and that each of the CSFs, in principle could be interpreted as a premise, a function, or a kind of ability. Hence, the CSFs should not be interpreted as a set ‘matrix’ dictating a set path of influence. They are to be read as a cluster of factors or elements that provide thematic focal points. The CSF cluster is thus an analytical stance, an approach to specify a range of potential processes and paths of influence. The CSF ‘shape’ or formation will, and must vary – along with the context of application.

2.2 The REL model: An instantiation of CSF formations

A narrative related to sea surveillance and logistics support around offshore petroleum installations invited an illustrative reduction of the CSF model. This model is in effect an instantiation of a set of possible (but not exhaustive) CSF *formations*.

An organizational unit that was designated for a specific task of maritime area surveillance was able to “upload” another part of the operational theatre with critical emergency resources (resourcefulness/rapidity in CSF terms) by direct intervention in logistical schedules and sailing routes of supply vessels. This response were based on *anticipation* of a situation that actually emerged later on, and the anticipation were triggered by observations from nearby (fishing) vessels. This narrative displays clearly the episodic character of adaptations, and that there are multiple, dispersed parties involved in the act of adapting to an emerging situation. This actual pre-structuring is *response-centric*, that is, the act of responding to circumstances that may pose a risk – now or later – is at the heart of resilience understood as adaptation.

Hence, the (Response-Execution-Leverage) REL model (Figure 1) is a specific (and simplified) CSF formation that constitute a heuristic tool for analytically “wrapping up” or “unwinding” resilient *praxis* conveyed as *adaptive clusters* (AC) based on a defined

“resilience inventory” (that is, CSF). The model is *response-centric*, focusing on different leverages of the response in terms of (i) different *entry points* targeting Attention, Anticipation and Risk Understanding, respectively, (ii) *ladders* indicating that a “lower” level entry may imply a succeeding “higher” order entry at the discretion of the execution of the activity, and (iii) a “*release chain*” indicating the inherent sequence in that (1) a new risk understanding will spark new anticipation, (2) new anticipation will spark new attention, and (3) attention will eventually spark a response. In addition, (4) in some situations the organization will be taken by surprise, and the response will have to be improvised. When the response is to be *executed*, it may be dependent on Robustness, Resourcefulness/Rapidity, Decision Support and/or Redundancy

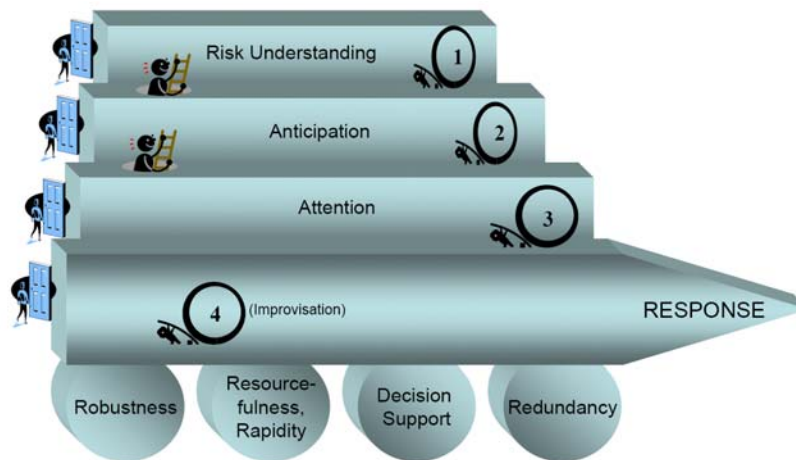


Fig. 1. The Response-Execution-Leverage (REL) model of adaptive clusters

3. STRATIFICATION OF EPISODIC ADAPTATIONS

A quest for OR must seek to find out how, and on which premises, various actions separated in time and space may add together into adaptive clusters (AC).

First, (episodic) resilience in terms of ACs is a result of many different activities, premises and resources interlinked in space and time, all/most of which are embedded within “normal” operations. Second, although resilience is something organizations *do* - being resilient for its own sake is definitely not their founding purpose. Each separate “doing” or praxis that contribute to resilience hence exist within a specific context which is derived from another organizational purpose. We thus cannot assume a uniform approach to a composite praxis like resilience. Different organizational actors will operate in different contexts, have different purposes, agendas and foci.

Focusing on episodic adaptations require an attention to ACs across these strata, and the basic inventory or constituents of these adaptive episodes must have the same explanatory power as CSFs (Størseth et al., 2010), possibly reduced into a somewhat

simpler formation (e.g., the REL model, Figure 1).

Organizational dispersion can be addressed by introducing the (sociological) concept of organizational *stratification*, that is, solidified, but not fixed action and decision contexts. Stratification may be based on the contingency of safety-relevant decision processes related to decision contexts (Rosness, 2009). However, this will (too) easily fit with the rational facades of the organization. Returning to the narrative sparking the REL model, and by implication of the common naval/marine experience that formed the basis of the very act of anticipation in the narrative, the possibility unfolds that *communities of practice*, rather than formal institutional arrangements, constitute stratification. Hence, being obliged to searching behind the organizational facade, it is more productive to employ a *constructivist* premise that is founded on Brown and Duguid (1991). That is, rather than seeking comfort in stereotypical conceptions of individuals, groups, roles or formal institutional arrangements, communities-of-practice (CoP) is used as the prime unit of analysis of stratification.

By using the REL model as an “AC hub” of winding up episodic adaptations, we can use the very same narrative to see the connection between the various strata, in terms of one (the surveillance unit) actually anticipating and responding, another (the supply vessel) actually carrying precious the resources, and a third (an oil installation) being loaded with resourcefulness/rapidly in relation to a forthcoming situation. Moreover, we can hypothesize that other parties (e.g., emergency dpt) could offer decision support when the situation escalates. As a result, we can depict a *Stratified REL (SREL) model* in which the specific (REL) formation of CSFs is a hub to which the contributions to adaptive clusters (AC) from different strata is visualized.

3 DIALECTICAL FUNCTIONING OF OR

Founding the (S)REL model on CoP thinking have profound implications. The whole notion of a “practice” then demands a radically different understanding than what we usually employ. We will have to see the connections between strata in episodic adaptations (SREL) as being positioned in a *dialectical field* between prescription and practice, thus acknowledging that the resilience inventory (CSF/REL) will be open to interpretation and contestation among its practitioners, and between practitioners as groups.

Nathanael and Marmaras (2008) offer a conceptual model to frame the dynamics of this inevitable dialectic. They elaborate the relationship between prescription and practice, and discuss how their complex interactions may positively or negatively influence organizational resilience. If the inherent anarchy of practice is strongly repressed, it will become hidden from view and lose its constructive role as a spring for praxis of adaptation. That is, if a pocket of “anarchy” is left unattended, the “spring” will dry out or degrade because it will lose its touch with the rest of the system/organization.

For the framework discussed in the current paper, the key point will be to identify how such a mute dialectic may affect the effectiveness of adaptive clusters (AC) derived through the SREL heuristic model, in a positive way. In order to do this, we must take a closer look at how Nathanael and Marmaras define prescription and practice,

respectively, and how they frame the potential for dialectical success or failure

It may also be argued that by restricting such dialectical relations as the “combat” grounds for development of punctuated, fixed new “effective” rules as a compromise between control regulation and autonomous regulation (LeBot, 2010), the result may be that these springs dry out. By aiming for simplification, clarity and closure (which is rational from a managerial viewpoint), insight in *opportunity* may be lost.

5 CONCLUSION

Resilience is in many respects an elusive form of safety, and searching for manifestations of OR in terms of underlying clusters of episodic adaptations is in many respect like hunting shadows with a torch. OR cannot be designed or prescribed, it should be nurtured and allowed to grow – on the base of existing adaptive practices. The (S)REL model provides a possible path for facilitating and supporting this.

REFERENCES

- Brown, J.S., Duguid, P. 1991. Organizational Learning and Communities-of-Practice.: Toward a Unified View of Working, Learning, and Innovation. *Organization Science*, Vol.2, No.1, Special Issue: *Organizational Learning: Papers in honor of (and by) James. G. March.*, pp 40-57.
- LeBot, P. 2010. The meaning of human error in the safe regulation model for risky organizations. In:Hollnagel, E., editor. *Safer complex industrial environments: a human factors approach*. Taylor and Francis
- LeCoze, J.C. 2005. Are organizations too complex to be introduced in technical risk assessment and current safety auditing? *Safety Science* 43 (2005) 613-638
- Nathanael, D. , Marmaras, N, 2008. Work Practices and Prescription: A key issue for organizational resilience. In Hollnagel/Nemeth/Dekker (eds): *Remaining Sensitive to the possibility of failure*. Ashgate.
- Rosness, R., 2009: "A Contingency model of decision-making involving risk of accidental loss". *Safety Science* Volume 47, Issue 6, July 2009, pp 807-812.
- Størseth, F., Albrechtsen, E., Eitrheim, M.H.R., 2010: “Resilient recovery factors: explorative study”. *Safety Science Monitor*, Vol. 14, Issue 2, Article 6.
- Størseth, F. and Grøtan, T.O. 2011. *Safety theoretical issues: scientific please, but keep it brief*. Paper submitted to ESREL 2011.
- Weick, K.E. & Sutcliffe, K.M. 2001. *Managing the Unexpected: Assuring High Performance in an Age of Complexity*. San Francisco: Jossey Bass
- Weick,K.E., 2001. *Making Sense of the Organization*. Wiley
- Weick,K.E., 2009. *Making Sense of the Organization. Volume Two. The Impermanent Organization*. Wiley