

How considering memory as an analogy to preparedness reveals its weaknesses

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Abstract

Threats that fully escape our attention pose a potential, but also a true and invisible, danger to us. They should stand out as the main concern for practitioners who are responsible for the state and level of preparedness. However, to address them, we should first grasp them as pure possibilities. Figuring them out requires tools. This article introduces analogies as a potential tool for this task and analyses the concept of preparedness itself with it. By using memory as a source analogy, the article enables us to consider preparedness as a potential source of vulnerability—it reveals how we can help ourselves in becoming better prepared by scrutinizing the current practices by systematically analyzing the presumptions underpinning them. The vulnerabilities that are most likely to escape our attention are the ones that have become a constitutive part of our very thinking of preparedness. Better preparedness without a systematically and thoroughly scrutinized concept of preparedness will never be able to fulfill the promise it signals to the public. This article outlines one way to pursue such an understanding and employs it as well.

KEYWORDS

analogies, conceptual analysis, contestable concepts, preparedness, vulnerabilities

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INTRODUCTION

Our security environment is characterized by constant change and uncertainty. This undermines our best-laid plans and erodes the very ground on which the respective planning processes have been established. Not only does the uncertainty hamper keeping threats under conscious control but it also proliferates problems in identifying them properly (Lagadec, 2007). However, one important goal for preparedness is cultivating a sense of security. The sense of security is due in part to our awareness that we have systematically made the most of our opportunities to draw lessons from previous disasters and, therefore, become better prepared for meeting potential difficulties in the future (Heino et al., 2022). The fact that the course of previous events has repeatedly taken us by surprise has not undermined our very belief in the essential role that the previous experiences play in building up and enhancing our preparedness. The significance of such past experiences in becoming better prepared appears to us as the prevailing dogma.

Although the unfolding concept of preparedness stands out as highly relevant and practically useful, it has remained theoretically relatively poor and rarely contested (Kirschenbaum, 2002; Staupe-Delgado & Kruke, 2017). Thus, one of our aims in this article is to contest this concept to strengthen the concept of preparedness itself (on the contestable concepts, see e.g., Boromisza-Habashi, 2010; Gallie, 1956; Gray, 1977; MacIntyre, 1973; Ruben, 2010; Swanton, 1985). Such a strengthening should help us in avoiding possible pitfalls in understanding and shortcomings in the respective practices that derive from issues that reside in the conceptual sphere, not in purely practical matters.

If the notion that we live in an increasingly complex, uncertain, and unpredictable environment truly captures the prevailing state of affairs, we should feel well-warranted in arguing that our previous experiences and the lessons drawn from them are of decreasing value in helping us to meet what lies ahead. Actually—as this article will demonstrate—relying on our memory of past disasters and critical incidents does not just leave us ill-prepared, but, in a very literal sense, it stands in the way of becoming well-prepared to handle unprecedented threats, impedes us in getting them under control, and slows us down in finding novel ways out from them.

The sheer possibility that adherence to the prevailing structures, modes of response, and approaches in themselves could inhibit us from producing effective responses to the crises still beneath the horizon, without a trace left in the individual or collective memory, deserves an enlightened and critical scrutiny. The challenge is, for instance, in preparing to tackle problems that may look familiar but that actually evolve or unfold in unforeseen ways. We have had a flavor of some such threats in the recent past due to, for example, the response to the COVID-19 pandemic, especially the idea of herd immunity. The same can be said of the “little green men” that appeared on the Crimean Peninsula out of nowhere, although, as it turned out later, not from outer space. Most of all, we need to keep in mind that the main cause of the 9/11 disaster was deemed to be a lack of imagination from the respective authorities.

The theoretical challenge here is to tackle both the bright, pleasant and the shady, unpleasant side of the concept within a single framework. We dig analytically into the flipside of the current concept of preparedness by a relatively convenient and well-known tool of thought and argue for a framework that not only acknowledges the desired presence of the prevailing form of understanding but also takes seriously the vulnerabilities and potential for harm built into it. We argue, thus, that the standard view of preparedness is conceptually flawed, and this shortcoming can amount to potentially counterproductive responses to threats, crises, disasters, and other

emergencies. It is high time to take the claims of increased complexity more seriously and adjust both our thoughts as well as our plans for action accordingly.

The novelty of this article comes from the method used. The selected approach builds upon the use of analogies in reconceptualizing and analytically scrutinizing familiar targets. In this case, the field of preparedness is characterized conceptually as being analogous to human memory. Thus, the knowledge of functions, structures, shortcomings, and strengths typical of human memory can be used as a point of reference in giving structure, identifying functions, and mapping generative relations for the conceptually less coherent and vaguer field of preparedness. In this sense, the method allows us to analyze preparedness at such a level of abstraction that is not limited to any certain level, such as national preparedness or the operations of individual actors, but goes beyond them.

Generally speaking, this article stands out as an argument for a theoretically informed, analytically illuminating, and practically relevant conceptual analysis. We will discuss the methodological ideas underpinning the use of analogies, then specify our source analogy and use it as a framework for the scrutiny of preparedness as a concept or an idea and as a practice. Memory as a source analogy quite literally (in) forms our analysis. Naturally, selecting another source analogy would enlighten other aspects of the target of the analysis. Obviously, the limits of our analysis derive partly from the limits of our source analogy and partly from the deficiency in using it skillfully. This is thus an explorative undertaking and a serious attempt at enlightening the conceptual depths underpinning our thinking of preparedness and the respective practices materializing those ideas and ideals.

THE CONCEPT OF PREPAREDNESS AND THE VULNERABILITY TO CATEGORICAL ERRORS

Recent research on memory has paid attention to the role of categorical knowledge as an essential element in retention. Concepts refer to categories, and memberships in categories depend very much on understanding the practices underlying the use of a particular concept as well as the efficacy of the action materializing it, not to mention predicting the deeds of those sharing the meaning (cf. Medin & Rips, 2005). The ability to identify the correct category plays a fundamental role in grasping, bringing in, and integrating the very aspects of the thing we try to recall. We group knowledge together instead of remembering lots of pieces of information. In similarity-based categorization, for instance, several entities are treated as if they were equivalent. Due to the categorization, we can draw on past experiences in a regular and reliable way in meeting new situations (Radvansky, 2017).

Recognizing patterns and regularities from the operational environment allows us to grasp the most important tasks and decide on appropriate actions; even though we have never seen the particular chains of events before, we can understand the relevant actions in a reliable fashion (Medin & Rips, 2005; Souza et al., 2021). Likewise, making categorical mistakes—getting the type of kind of event wrong, for instance—leads us astray and seriously hampers our efforts in recalling whatever it is we are trying to bring back or, rather, reconstruct from memory.

Research on preparedness, on the contrary, has not paid much attention to the role of categorical or conceptual issues. This is, we suppose, mainly because making preparations as a human activity and building up preparedness as a social capacity appears to be something thoroughly familiar, well-known, and possible to point out clearly and discuss without concern of mixing things up. Therefore, there has not

really been a need to claim that we should seriously question preparedness categorically and that such questioning could cast light onto the conceptual depths, practical flip sides, and social amnesia that could be a potential source for counterproductive dynamics and tendencies.

Acknowledgment of the role of categorical knowledge in human cognitive functioning has been a blind spot in memory research. Respectively, the failure to address preparedness categorically has resulted in a source of threats remaining hidden within our very best efforts to secure ourselves from them. For example, Heino et al. (2022) point out that it is beyond the states' preparedness imagination that well-intended responses could effectively contribute to escalating a threat—those well-planned and rehearsed countermeasures could actually contribute to making the threats even more harmful and challenging.

Preparedness—Contesting the current concept

The potential for conceptual shortcomings needs to be reflectively addressed by contesting the very concept of preparedness itself (cf. Gallie, 1956; Gray, 1977; MacIntyre, 1973; Swanton, 1985). Preparedness is, essentially, the use of knowledge, experience and technological advances systematically and consciously to gain ever-more-encompassing protection from natural and human hazards, disasters, and calamities (Tierney et al., 2001, pp. 4–8). Thus, enhanced preparedness exemplifies a causal connection between good intentions, human ingenuity, growth of knowledge, continuous learning, and the avoidance of previous shortcomings and the materialization of wanted outcomes in the future (Kirschenbaum, 2002; Staupe-Delgado & Kruke, 2017).

Preparedness is based on recorded facts. The facts are not only memorized in the records, statistics, and narratives but also in the form of plans, capacities, and capabilities reflecting the lessons drawn from past experiences (Heino et al., 2021; Samimian-Darash & Rotem, 2018). In time, the horizon of possibility is increasingly grasped through them. Novel events (and the unforeseen unfolding of the known ones) are accidents waiting to be recorded afterwards, not surprises calling for capacities of other kinds and their systematic development today, like learning to drop one's tools or improvising new uses for resources at hand, as Weick's (1993, 1996, 2001) analyses remind us.

Whatever is seen as rational, like learnings from past events and their consequences, is likely to fully absorb professional attention and determine the sphere of true practical solutions. Preparedness becomes dominated by calls to be realistic, where “realism” is determined by the rootedness of historical case records and faithfulness to the lineages of continuously improved plans, sources of resources, and tools developed for the handling of respective incidents. The idea that this very approach consists of a source of vulnerability in itself is unthinkable given the prevailing concept of preparedness (Heino et al., 2022). To contest the concept is to argue that the concept of preparedness has become undermined in unrecognized and unseen ways by gaps, in-betweens, and flip sides that are reflected both in our grasp of the issue and the corresponding practices. The challenge, then, is in finding ways to cast light onto them in a systematic, conceptually coherent and theoretically insightful way. It is, essentially, to enhance our powers in imagining possibilities that are real, although not, fortunately, empirical, in disciplined ways (Weick, 1989).

Tackling the challenge

How, then, are we to contest the concept of preparedness in a methodologically warranted and practically relevant fashion? The suggestion that the causes for practical shortcomings could reside in the flaws of the respective concepts and that the remedy to the first-mentioned is to make adjustments to the latter and thereby to our grasp of the issues may well appear—at first sight—far-fetched, “idealistic,” or simply biased toward theory. The proper response to such doubts is not in putting forward a fanciful narrative, but in figuring out a theoretically well-based conceptual scrutiny that offers an insightful analysis and account of the limits, gaps, and flip sides in our understanding and provides for the formation of a new, more comprehensive concept. The aim is not to replace the dominant paradigm, but to point out its flaws and flip sides that carry the potential for undermining its very intent and purpose.

In our analysis, we draw on a methodology that has proved itself not only in science education but also in theory formation (Weick, 1989), although discredited and cast off from the methodology by the emergence of empiricism (e.g., Bailer-Jones, 2002; Boyd, 1993). It offers means for the analysis of conceptual terrains, both old and new, but without losing touch with the well-established ways of thinking and speaking that set the standards for rationality and meaningful thought. While abstract discussions of methodological tools have their time and place, in this article we very much refrain from it and demonstrate the use of analogies as potential means for conceptual explorations and explications in practice (e.g., Gentner, 1981; Gentner & Jeziorski, 1993; Mumford & Porter, 2011).

We believe that scholarly discussion and research on memory provide a potential source analogy for enlightening the concept of preparedness in ways that cast light on the shortcomings, default lines, and gaps in the way it is grasped and responded to today. Utilizing an analogy means that we apply our explicit understanding of something (memory) to figure out the constitution and dynamics of the object of interest that is not directly observable in the totality of its constitutive relations, including the amnesia anchored in its flaws and flip sides. Such a theoretically informed analysis stands out as a critical tool for expanding our horizon of understanding, opening new perspectives, and scrutinizing the prevailing ones, as well as fostering critical reflection. A necessary precondition for the latter is the explication of the source analogy (Gentner, 1981; Mumford & Porter, 2011).

Explication of memory as our source analogy

To contest the concept of preparedness, we must first explicate our source analogy. To begin with, both the human mind and the human body are marked by evolution, personal history, and society. They have evolved as concrete responses to the challenges in our environment. The very structure of the human body is itself a form of memory (Fuchs, 2016). It expresses the demands of our environment and how to adjust to meet them (Michaelian, 2012). The human memory as a structure, memorizing as a process, and retrieval of the memory as a human–social function consist of a complex whole with several layers and dimensions (Hoskings, 2016; Sutton et al., 2010).

At the national level, official historiography, systems of education, and media, as well as national legislation, among other things, define what is not to be forgotten from the past, how it is to be remembered, and what is to be forgotten. Thus, memory is also political and official (e.g., “official memories,” museums, monuments,

anniversaries, and ceremonies) and constitutes symbolical practices that shape the national identity (Nairne & Pandeirada, 2004; Otgaar & Howe, 2014).

Memory is not solely a self-related and deeply social phenomenon, it is also a structural phenomenon (Hoskings, 2016). Other structures that serve our survival in hostile environments have emerged upon it, such as learning from experiences, the capability to keep valuable lessons available at hand, and to refine them both quantitatively and qualitatively (Cohen & Bacdayan, 1994). Thus, memory as the source analogy expresses preparedness both in its structure and in its utilization. Grasping the former should serve us well in enlightening the latter.

Functionally, memory appears to encode, store, and retrieve information (Hollingshead & Brandon, 2004). Only a small proportion of all available information is coded. We are good at restoring what is considered important, but also at ignoring information deemed irrelevant. Thus, the way we focus our attention controls and determines what we are temporarily aware of (short-term memory). Only things and issues we have become aware of are possible to translate into action and restore into long-term memory for later use (Sumrall et al., 2016; Sutton et al., 2010).

However, encoding, storing, and retrieving information offer only a pale reflection of how memory works. Memory also involves the continuity of self-experience, regulation of emotions, and motivation for future actions, as well as the maintenance of social relationships. Our motivations, expectations, and goals also influence how we code, store, and retrieve information. The information that becomes coded is ultimately conditioned by our attention, interests, and expertise. The information, which eventually becomes retrieved, depends not only on its intended use but also on the subtle features of the current mood and context (Sutton et al., 2010).

The experience of memorizing is regulated by unconscious processes that produce mental models of cognition, emotions, and behavior, which serve the pursuit of objectives. Part of what we remember is activated directly by some hint. Part, in turn, is influenced by generative models, such as the need to maintain a sense of coherence and integrity of life-related experiences, or the correspondence between the world and the memorized. These models often limit the information sought. What is consistent with our pursuits and goals is retained, while we tend to forget things that conflict with them. The self sets limits on the memory, while the memory limits possible selves. Therefore, what is retained in the memory is selective in ways that remain undetectable to the very self (Sutton et al., 2010)—a notion that is directly related to the contestation of the concept of preparedness and our quest for identifying possible counterproductive dynamics inhering in it.

Thus, the coding, storing, and retrieving of information is conditioned by personal identity. Besides experiences, this information consists of various group memberships (Schultz & Hernes, 2013). Moreover, along with this social dimension, memory has an external physical dimension. An organization consists of ways of perceiving, interpreting, and making sense of the requirements of its environment. Everything with a history—tools, rules, practices, division of labor, organizations, structures of governance, and so on—expresses efforts to restore into itself valid anticipation of what is required for effective conduct. Their structures, their very constitution, and the respective mode of being materialize a theory of these requirements and their continuous survival speaks for the relative validity of what is thus memorized. As physical memory systems, they condition attention, give form and content to things and issues that appear to be worth remembering, and effectively screen out what is to be forgotten or passed by without noticing.

The selectiveness of our memory is a result of the functioning of multilayered processes and structures associated with it. The issues and things we focus on and consider relevant, the concepts and tools we use for making sense of experiences, and

the ways we keep traces of them in both individual and collective memory are, to a large extent, given to us. Thus, they fall from our consciousness. They condition our attention and thus remain beyond it. They are the elements underpinning its very possibility. Nothing in the latter can directly reveal its constitutive role. That is, as memory systems and systems with memory, we anticipate a future both in ways we are aware of and in ways we remain unaware of.

Categorical knowledge is a kind of memory system, but it also plays a valuable role in memory retrieval (Hemmer & Persaud, 2014). Efficient reconstruction of a past event depends on the purpose, the relevant experiences, the situation, and the categorical knowledge available, among other things. If what is recalled from the memory directly reflects the strength, grasp, and clarity of categorical knowledge, figuring out the system of categories in general and the defining properties of the ones within the interest is of particular significance in understanding responses to different situations and the way they become attached with a particular meaning. What lies behind such a categorical understanding of preparedness, or what comes effectively—although in varying adequacy—constituted in it is here referred to by the concept of preparedness.

Understanding the role of human memory in general and the way it is structured and conditioned in its functioning—especially its selectiveness—offers a powerful scheme for scrutinizing the concept of preparedness, especially the way selectiveness emerges in it, resulting in potentially significant vulnerabilities inherently escaping our attention. The source analogy indicates the need to prepare for grasping the multidimensionality and the relations between layered structures conceptually. Figure 1 gives a schematic representation of our source analogy and draws out a theoretically warranted framework for the next step; that is, an analysis of the concept of preparedness along the lines defined in it.

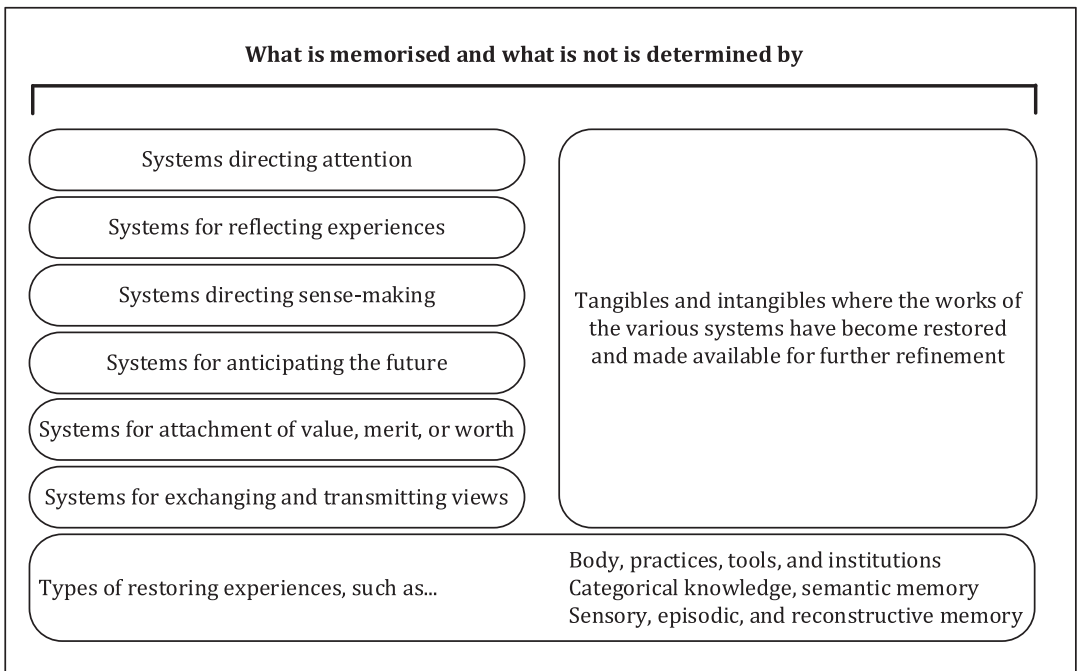


FIGURE 1 A schematic representation of memory

The aim of the analysis is neither to point out the correspondences between the source analogy and the target area nor to identify common denominators per se. The source analogy provides a searchlight needed in identifying and exposing the conceptual flipside as an unidentified source of vulnerability and a potential feeding ground for counterproductive dynamics. The idea of vulnerabilities emerging as a by-product from thoughtful and well-intended efforts to strengthen preparedness and the respective capacities and capabilities represents for us the potential flipside of the current concept of preparedness. Inquiring into the latter is to contribute to the discussion of its current state as well as to extend its sphere. From our point of view, the concept not only deserves questioning but continuously requires it.

THEORY-INFORMED ANALYSIS OF THE CONCEPT OF PREPAREDNESS

Following the idea of preparedness as a concept calling for critical contestation and the schematic model for the analysis based on the source analogy (Figure 1), we first need to explore the way attention becomes directed. Second, we should properly grasp how experiences become screened out and how specific senses—as well as a particular value, merit, or worth—become attached to them. Third, we should scrutinize the presumptions underpinning the respective scenarios and interpretations and how they are being transmitted, institutionalized, and integrated into systems of emergency response, organizations, preparedness planning, training, professional skills, and identity, as well as how they are communicated to the wider society. The three objects of analysis refer to different levels or analytical layers reflecting the complexity of the issue and the need for a concept of preparedness that is structured, respectively, and thus capable of providing for a deeper, analytically more comprehensive, practically more empowering understanding that is wielded to contest the prevailing idea of preparedness.

This contestation is advanced by identifying flipsides, gaps, and fault lines in the prevailing concept of preparedness. We want to emphasize the productive or generative—potentially empowering as well as constraining—role of our concepts. The latter determines the way issues and things—events and inhabitants of the world for us—appear to us as categorically distinct as well as intellectually adequate and practically complete, including the relations between such categories on the next levels. The human inclination to tie different threads into internally coherent and meaningful wholes often falls into wishful thinking, building upon grounds that are conceptually closer to quicksand rather than a firm bedrock. Such a tendency leaves us vulnerable in ways that fully escape our attention.

Preparedness and the conditioning of attention

Next, we will explore the way attention becomes directed within preparedness. To start with, paying attention is a prerequisite for retention in memory, but reciprocally, memory plays a significant role in what is attended. The two cannot operate without one another (Chun & Turk-Browne, 2007). A prominent feature of attention is its scarcity (Festré & Garr, 2015). This scarcity of attention becomes increasingly evident at the more encompassing levels of action. It means that individuals are less restricted by it than societies. The second relevant feature of attention is its fundamental role in the growth of knowledge and learning, hence being intimately connected to memory

functions. The third characteristic is the way this scarce resource has become manifoldly conditioned at different levels and across them.

The very idea of preparedness is accompanied by a sense of urgency or a need. In modern, functionally differentiated societies, preparedness materializes in many forms and at different levels. It stands out as a system that includes numerous agencies and actors, sectors, tasks, a variety of systems of operational logic, technologies, rules, agreements, and collaborative relationships. It also includes confidence and commitment to the capacity for resilience and recuperation thus generated. One feature of the system is a status hierarchy; some countries, services, procedures, systems for planning, coordination, and so forth, are considered better than others. Reputation conditions attention categorically. Known exemplars in excellence draw attention to them, while others become followers forced to play catch-up.

Issues proclaimed to require preparedness and events we are prepared to respond to are true magnets for attention. They are highlighted in public discussions as well as in preparedness plans and exercises. We are reminded of their significance and requested to prepare for a number of them, like surviving a few days without electricity or potable water (Choi & Wehde, 2020). Therefore, people who have, say, extra batteries and a few bottles of water stored consider themselves adequately prepared. Instructing people to pay attention to the number of listed items replaces true threat scenarios—preparedness is reduced to a cookbook, which lists tasks and activities needed for being prepared (Kirschenbaum, 2002).

In the attention economy of preparedness, attention becomes focused on the basis of threat labels best capturing the public consciousness and the collective memory. The result is a threat economy and competition between proponents of, or propagandists for, a specific threat. What is at stake is the public recognition of the likelihood, the severity in terms of the number of people affected, the durability of the unwanted effects, and so on, of each. The highest likelihood is granted to the events with a clear and visible track record, such as events in the recent past, one's own past, the past of someone close to oneself, or organizations and societies comparable to one's own.

The threats listed as worth general attention and preparedness from the public at the societal level—or even from humanity at the global level—call for ingenious operationalizations at the local level as a response to them, as well as preparedness for their consequences. For example, risk attitudes are driven by salience (Bordalo et al., 2012), as can be noticed in decision-making regarding wildfire events, among others (McCoy & Walsh, 2018). The result may be, for instance, that when public decision-makers take risk mitigation measures, they tend to favor some communities over other based on demographic factors (Anderson et al., 2020).

Preparedness and selective retention

It is important to grasp how experiences become screened out. The transformation of experiences from past events into enhanced preparedness implies changes in the division of work, the respective responsibilities, and the mutual relations between different authorities, operators, and agencies. The very structure of the latter is to keep alive a capacity that was once deemed necessary or sufficient for an adequate, efficient, and effective response within a threat scenario or a number of them. The past demands are reproduced in such structures in general, especially in the roles and skills of its members whose task is to mobilize it and, by doing so, tackle the issue (Tierney et al., 2001).

Organizations and the division of work between and within them do not institutionalize past challenges as such in their very form, but only some—occasionally even conflicting—interpretations of them. Such conflicts result from the fact that the most recent interpretations can never totally dominate the view of history but need to align with the previous interpretations and their structural manifestations.

New capabilities or capacities are an addition to the previous ones, not their replacement. Adoption of new threats takes place by adding up, adjusting, and giving new meaning to the traditional ways of tackling threats. The threats are accommodated to current operational schemes rather than used as catalysts in their transformation. The fact that the old threats have not disappeared and thus need to be kept in mind warrants this approach, but it is also likely to contribute to wishful thinking, misidentification of threats, and vulnerabilities.

Thus, experiences collated and coded into organizational structures and the refinement of the latter into practical response capabilities and capacities become increasingly complex and multidimensional in time. This complexity implies that they often become blurred, characterized by mixed identity and divided by organizational conventions rather than anything related to the threats themselves. What is on the top, the most recent and the most commonly met threats, tend to order the agenda for preparedness at any specific time. The result is the incremental growth of an increasingly encompassing—but also increasingly complex and incomprehensible—system that provides for learning from one's own failures and the experiences of others as well as the active adaptation of innovations, but also constrains, channels, undermines, and rejects them.

For example, Johannessen (2018) and Boe et al. (2020) have examined the actions of the Norwegian police in the massacre that started in the center of Oslo on July 22, 2011 and continued on Utøya island. The event clearly belonged to those outside the actors' horizons of experience. Refined practices of various police units, their divisions of work, coordination, and leadership left much to be desired, which appeared as an inability to reflect the nature of the situation and produce creative responses to it (Johannessen, 2018). As Boe et al. (2020) state, the actors would have needed a well-functioning combat mindset—the roots of this deficiency may interestingly stretch back to the police student selection processes. Preparedness as a memory-like structure detects areas for improvement and finds lessons learned from the events. However, as Johannessen (2018) mentions, the July 22 Commission's views are quite selective. From the perspective of this paper, it can be presumed that it would be particularly difficult to examine how something that typically is perceived as a strength could contribute to operational inefficiency.

Preparedness and attaching events and issues with merit, worth, and value

Next, we will explain how specific senses, as well as a particular value, merit, or worth, become attached to experiences. Value or merit attached to things and issues worth remembering occurs as if by the weight of the things themselves; that is, seemingly because of the nature of the very objects themselves, but actually such a value reflects the things already actively memorized or the relations between the former, the categories attached to the situation determining what kind of situation is in question, the expectations built into the structure of our senses by evolution, and the like. Everything we observe or perceive is thus predetermined in terms of its valence to us.

In organizational structures and operational practices, this materializes in the interpretation of the task environment from the point of view of the purpose. Worth depends on the value of events at the focus of attention and on the success in tackling them day after day. Success sharpens the focus, the sense of purpose, and the skills in keeping the events under control. What remains unlearned are those situations that, either by their scale, longevity, or intensity in their combination of features, refute the very beliefs upon which one has built one's professional identity and anchored dearly held views of one's self. The ways attention becomes conditioned by repeated success in standard tasks creates potential vulnerabilities in detecting situations that resemble the aforementioned by their outlook, but actually derive from another kind of dynamics and require something extraordinary to be successfully tackled.

Karl Weick's (1993, 1996, 2001) analyses of wildland firefighters provide an inspiring example of this. A group of firefighters jumped from a plane near a wildfire, the dynamics of which resembled those previously successfully encountered. Since the work descriptions seemed clear, focusing on their implementation had to lead to the desired outcome. However, the dynamics of the fire quickly changed in such a way that it required resourcefulness and improvisation rather than standard procedures. The leader of the firefighters, who tried to outrun the fire, urged others to drop their tools and, as a last resource, lit an escape fire as the way out of a life-threatening situation. Such a demand and action were completely contrary to the firefighters' understanding of themselves, their mission, and their professional identity. They did not come there to start new fires but to put them out. They had learned to look after their tools and attach a specific meaning to them, not to throw them away. Weick's analyses interestingly illustrate how merit, worth, and value attached to events and issues can hinder proactive resourcefulness in a situation whose dynamics refute the very beliefs and shake professional identities and actors' self-views.

Considering preparedness analogous to human memory, it seems that attention becomes structured by tendencies that emphasize the sharp division of responsibilities, standardization of work processes, work descriptions, and procedures, as well as refinement of tactics, core skills, and tools for efficiency rather than effectiveness. In time, different organizations attend to very different environments, responding to issues and events that are categorized in increasingly idiosyncratic ways and the responses to which are seen to acquire their justified merit from within. Obviously, the development creates attentional gaps between organizations as well as between groups within an organization. Fragmentation of attention results in undetected fields and terrains, whose potentiality as a source for threats or a contributing factor in their escalation, especially in terms of coordination of efforts, escapes reflection.

Wisdom in preparedness stored in relations, tools, manuals, job descriptions, and task prescriptions

Finally, it is interesting to scrutinize the presumptions underpinning the respective scenarios and interpretations and how they are being transmitted, institutionalized, and integrated into systems of emergency response, organizations, preparedness planning, training, professional skills and identity (cf. Adey & Anderson, 2012). To begin with, it should be borne in mind that preparedness belongs to public interests. The systematic pursuit of public interests creates public bureaucracies that attach the respective concept to their own logic, the bureaucratic wisdom, that works well with standard cases but falls below the optimal whenever the case at hand does not fit into predetermined categories (Heino et al., 2022).

The success in handling typical cases is acquired at the cost of efficacy in tackling incidents that do not follow the bureaucratic default lines. The long memory of bureaucracy is incorporated into relations between clear and distinct responsibilities, development of expertise along with them, clear role structures, definitions of tasks, continuous refinement of tools, skills, written manuals, instructions, rules of conduct and systems that reward rule-following, and discourage rule-breaking and improvisation.

What goes largely undetected is the differentiation between the domains of knowledge and the fragmentation of overall responsibility. A bureaucratic mindset enhances divisions in work, understanding, identity, and language that draw their proponents apart from each other. It results in an expansive growth of expertise but only within smaller and smaller blocks (cf. Olsen, 2020b; Tehler et al., 2020). While the distinct functions become increasingly capable of accomplishing their individual tasks and carrying out their distinctive responsibilities, the efficacy of the overall system decreases and, eventually, evaporates into thin air without reckoning. On paper, the system appears increasingly advanced, approximating full completeness quickly. In practice, it results in fragmentation of the purpose, enumeration of stances and elaborate viewpoints, methods, and professional identities that put the emphasis on mutual differences rather than joint destiny. This resembles a situation where individual memory functions lose touch with one another as well as with their role in jointly helping the person to best survive in a challenging environment.

Mutual relations between various responders develop along lines set by the bureaucratic ideal. The latter provides for the elaboration of responsibilities, well-defined tasks, and the further development of competencies, tools, and tactics in them. Excellence becomes identified in close relation to specified exemplars, roles, procedures, tasks, and tool ascriptions. Thus, the burden of remembering is externalized and attached to manuals, standards and formal procedures (cf. Olsen, 2020a). Differentiating between skills and knowledge affects the identification of problems and resonates with assessments of whether the characteristics of a situation meet the conditions to fall within the remit of an actor (Heino et al., 2021).

Task environment is defined in categorical assignments that are unable to contain possible idiosyncratic contingencies or even a hint of them. Once the expected response is produced and an emergency is successfully resolved—as happens almost every single time—the experience strengthens the perception of the operational effectiveness and the adequacy of the preparedness. Problem identifications encoded along bureaucratic lines and restored in respective operational capacities as part of the preparedness, turned into professional practices, enhanced by evaluation criteria and internalized as a sense of duty and pride of membership evolve as distinct universes of their own that build distance between themselves and the other respective worlds. They persist although their members change, and this persistence is due to the interwoven relations between various systems encoding knowledge and playing out the functions of memory.

Plans, manuals, tools, and methods structure the problem space perceived by their users. By their sheer presence, they intervene in the process of problem formulation and representation. By relying on the blueprint, action card, or tool, a responder begins to contribute to the problem conceptualized in and by them (Baber, 2003). In the long run, the responders will turn into reliable followers of the given plans and cards and their skilled users. However, this weakens the connection between the real situation and the situation given by them that has become internalized by the user of the respective tools, plans, and other schemes.

Thus, the real becomes seen through the lens of what is institutionally given. It is not seen in its own, or potentially fresh, terms, but through the ways the prevailing

concept of preparedness has turned into material practices, operational ideas, and strategies for improvement. Thus, a flipside of the latter is the absence of skills in interpreting or reading situations that potentially deviate from the expected ones. For example, Heino and Kalalahti (2021) and Heino (2021) propose that acting effectively in unexpected situations where the stakes are high seems to require distinctive cognitive abilities from experts. Those abilities manifest in the personal inclination to be suspicious of the fitness of competence of plans, manuals, job descriptions, and task prescriptions to the situation at hand, as well as in the attempt to develop their operational capabilities to be increasingly independent of the availability of standard resources. Thus, coping with such challenges seems to require distrust both to memory and things that remember, as well as resourcefulness in broadening the perspective for interpreting situations, and to strengthened improvisation skills just in case the memory-based preparedness—*notwithstanding its undeniable benefits—*could lead astray and result in counterproductive consequences.

Therefore, the undeniable strengths of modern response systems do not come without costs; some of them are hidden and some clearly visible. Whenever a problem requires a response from the next level of action, such a response tends to fall short of the required one. Moreover, whenever the problem turns out to be an unforeseen one and, thus, calls for proper identification instead of a textbook response, perceiving it as such tends to take a long time to materialize.

DISCUSSION

Under the prevailing concept of preparedness, the operational capabilities of the response systems are increasingly dependent on the availability and selection of the right blueprint, action card, or tool and on the presumption that the forthcoming emergencies are fundamentally consistent with the past ones. Professional identities and status hierarchies become built upon the concept of preparedness where the potential emergencies have a strong resemblance to the preceding ones. Successfully tackled emergencies seem to verify the validity of the scheme and the respective concept. Doubting the latter does not appear only futile, but purely impossible. As the analysis of this article has demonstrated, this is a potential vulnerability that is likely to materialize in the inability to deviate from established plans, forget action cards, drop the tools at hand, and improvise responses when they are called for by the demands of the unforeseen situation.

Action cards provide a good example of memory externalized. One does not need to remember the content of an individual card itself, only where the correct card is located. It occasionally appears that individual cards need to be updated, refined, or added up to the system. But the very system of action cards is never considered as a whole—the system's coherence remains unchecked and untested. And even while each individual card may make perfect sense, it does not imply that they make sense as a system.

Undoubtedly, from the point of view of becoming better prepared, it is essential to pay attention to the previous responses, evaluate the degree of success in them, and identify the causes for the possible variance in performativity. The aim is to screen and specify possible lessons worth learning and, once successfully accomplished, to document the appropriate learning points and turn them into better professional practices. In this sense, the prevailing concept of preparedness, when analyzed as analogous to memory, is both highly functional and in many ways indispensable, but nevertheless not worth sanctification. The future will undoubtedly bring forth

qualitatively novel threats and dynamics. Put differently, possible futures are increasingly disconnected from our understanding of the past, which calls for alternative conceptualizations of and practices for preparedness. This article explained why we feel we become increasingly more in tune with the world, while simultaneously, the lesson to be drawn from the encounters with it informs us to prepare for surprises.

CONCLUSIONS

As this paper demonstrated, the dominant view of preparedness consists of a cradle for a counterproductive flipside; that is, an undetected source of vulnerability as it emerges within a social practice and the understanding underpinning it that appears as a purely positive and wanted phenomenon. Thus, we come to suggest that the prevailing concept of preparedness carries a dynamic that undermines its explicit intention and purpose and possibly even works against it, like fantasies, false memories, or mixing wishes with facts could do in the life of an individual.

Our analysis of the concept of preparedness suggests that preparedness should consist of a thoroughly reflective practice. Such a practice would work to grasp the conditions for its very possibility, including the possibilities and constraints built into the current state of knowledge, organization of knowledge production, division of labor in knowing things—that is, asking from itself what do the fragmentation of understanding, the proliferation of frameworks, and interpretation schemes mean in an increasingly complex environment, instead of traveling on one of the bandwagons.

However, our grasp of the big picture, evidently, will be always conditioned in some ways that simply escape our grasp. This article suggests that we should suspect that such an escape implies a potential source of vulnerability and, therefore, could undermine our very preparedness. To enhance the latter, we need to keep contesting the prevailing concept of preparedness (and along with it, the respective practices), scrutinizing the concept analytically by whatever rational means we find fit to this purpose and doing our best in paving the way toward a concept of preparedness that is more encompassing, reflectively grasped, and offers a better ground in helping us to meet both the old and unforeseen threats in the future.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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