Human Factors and Systems Interaction, Vol. 84, 2023, 210–216
https://doi.org/10.54941/ahfe1003606

Negative Capability: A Human Factor of Resilience for Crisis Management and a Valuable Training and Intervention Objective

Simon Flandin[1], Olivia Scannell[2], Elleke Ketelaars[1], and Germain Poizat[1]

[1]University of Geneva, CRAFT Lab, Geneva, CH-1205, Switzerland
[2]Médecins Sans Frontières, FIN-HR L&D Team, Geneva, CH-1211, Switzerland

ABSTRACT

In the field of crisis management, negative capability can be understood as an individual's or team's ability to tolerate and accept challenging and confusing situations, supporting the ability to search for meaning and means of action despite a high degree of indeterminacy. In this paper, we develop the conceptual, empirical and practical value of negative capability in the field of individual and team resilience in crisis management. Conceptually, its interest is to distill and define the human capacity to act when faced with the unknown. Empirically, this concept offers new analytical possibilities, as exemplified through a case study conducted during a COVID-19 pandemic peak. Practically, we argue that developing negative capability can be a relevant objective for crisis management preparedness and provide tentative orientations for the design of training interventions that focus on human factors. We conclude with suggestions for further research.

Keywords: Negative capability, Resilience, Crisis management, Safety training

INTRODUCTION

Negative capability is a concept that was first introduced by poet John Keats in 1817 to describe the ability to hold multiple conflicting ideas in one's mind at the same time and to remain open to uncertainty and complexity. It has been discussed by many philosophers, writers and artists as a key aspect of creativity and open-mindedness. To a lesser extent, this concept has been used by scholars in a variety of research fields including art, history, sociology, psychology, management and education, with a variety of meaning and purposes.

In all these fields, though, the concept of negative capability seems to be utilized as a remedy to recurring dissatisfactions regarding positive conceptions of human capability. Positive capability refers to the ways individuals actively shape their environment and make things happen. It is about taking and keeping control, monitoring, reassuring oneself, and having a definite plan or idea of what one wants to achieve. It is certainly important in many

© 2023. Published by AHFE Open Access. All rights reserved.

contexts that are stable and for which activating prior knowledge and rules is effective. It is, however, of very limited usefulness in a wide range of situations of particular interest in human factors. These situations are (i) unprecedented or very confusing, (ii) dynamic and quickly evolving, (iii) dilemmatic or pertaining to "unruly problems" (Ansell & Bartenberger, 2017).

THE CONCEPTUAL INTEREST OF NEGATIVE CAPABILITY

Coping with this kind of situation demands negative dispositions in addition to positive ones. With available knowledge, rules or solutions being unsuitable or unimplementable, individuals need to tolerate and endure ambiguity, paradoxicality, and emotional turbulence of not-knowing or half-knowing. Therefore, they need to "forbear imposing false, omnipotent or premature solutions on a problem" (Williams, 2018, p. 42), and to "engage in a non-defensive way with change, resisting the impulse merely to react to the pressures inherent in risk-taking" (French, 2001, p. 482).

Applied to crisis management, the concept of negative capability can be understood as a disposition of crisis managers (i) to accept their own vulnerability to uncertainty, as opposed to usual habits of thought and action leading them to mobilize expertise with certainty, and (ii) to find ways of acting, even without a clear goal or solution, that create opportunities for enlarged perception of the environment, hypothesis generation (especially through abduction) and testing. Conceptually, its interest is to distill and define the human capacity to act when faced with the unknown, under the postulate of "unknowability" (Weick, 2006), i.e., understanding a situation using previous knowledge is not always possible or necessary to take action. It also helps clarify the human factor of a system's graceful extensibility (Woods, 2015), i.e., how a system stretches to handle surprises.

Our assumption is that negative capability, as defined above, is a crucial component of resilience, when considered as a situated capability to resist and react efficiently to one or a series of critical situations in the course of professional activity, especially in the field of crisis management. Therefore, we need to investigate if, beyond its conceptual interest, negative capability actually offers original analytical possibilities, and provide empirical evidence of being a relevant human factor to performance in certain circumstances. This seems particularly important in the current state of safety sciences debates, new views on safety being criticized for not providing enough empirical evidence (Cooper, 2022).

THE EMPIRICAL INTEREST OF NEGATIVE CAPABILITY

The COVID-19 pandemic provided an opportunity to study negative capability in the messiness of the real world. We studied how a Project Medical Referent (PMR) appraised and coped with a series of unprecedented situations related to the shortage of oxygen therapy resources in a humanitarian context during the pandemic peak. Specifically, he was faced with an increasing influx of infected patients, both within and out of the scope of admission

and treatment protocol (including cases of desaturation and life-threatening situations).

Data Collection

Fieldwork was impossible due to risk of contamination and the impossibility to travel, yet collecting first-hand and up-to-date data was necessary for ecological validity and methodological reliability. Therefore, the PMR was requested to provide one self-recorded video narrative per week over a period of four weeks. The instruction was to recall working episodes that seemed particularly "salient" or significant to him, should they be "good moments" (efficient coordination, impression of efficiency, decision-making, feeling of having the necessary resources, feeling prepared to cope), or "bad moments" (moments of incomprehension, difficult ethical choices, dilemmas, difficulties in coordination, refusal by colleagues), but also moments of unexpected success, moments of improvisation, moments of great intensity, or any other moment of particular importance or interest. He was asked to describe the context of the situation, then to tell the story of what happened and comment on his experience (verbalizing his concerns, expectations, knowledge, elements taken into account, actions and interpretations in the moment...).

He described four significant phases that can be summed up as following:

- Phase 1: "A feeling of being overwhelmed" emerged because the usual solutions were not adequate to meet anticipated needs.
- Phase 2: A considerable effort was made to develop a partner organization's proposal that did not bear fruit and generated deception.
- Phase 3: The feeling of being overwhelmed increased, caused by multiple scarcities and the need to manage a lot of deaths and corpses.
- Phase 4: The idea to construct a small size oxygen-generating plant was authorized and made possible, that generated joy and hope.

Four follow-up online interviews were recorded (total duration of 284 minutes) using micro-phenomenological methods grounded in the Course-of-Action empirical research framework (Poizat, Flandin, & Theureau, 2022).

Data Processing and Analysis

Data was processed using a semiotic approach (Poizat, Flandin, & Theureau, 2022). The researcher who conducted the interviews presented the challenges identified by the PMR in a standardized reduced narrative. Afterwards, the four researchers collaborated to analyze the data and identify emerging themes and analytical frameworks. Through this process, they were able to identify episodes of negative capability and the related issues or events that emerged from the PMR's perspective. As a result, three main dimensions of the PMR negative capability were identified and described throughout these four phases.

RESULTS

Tolerance to Tension and Temporal Uncertainty

The PMR's reported behavior demonstrated endurance in the face of a long-lasting and seemingly intractable oxygen problem. He often mentioned the build-up of anxiety and pressure resulting from (i) the actual impacts of oxygen scarcity, (ii) his projection of future demands and anticipated shortages, (iii) the repeated failure of his efforts to find a solution and manage the consequences of his initial actions to investigate and palliate the supply problem and (iv) the need to absorb and handle discordant coordination with external actors without severing ties. He did not see a satisfactory means to resolve the problem until a solution was found, and during the process had no visibility of how long it would last. What is notable is the way he withstood the strain of the temporal uncertainty. He continued to meet daily shortfalls, whilst remaining engaged in solving the underlying oxygen supply problem with both proactive and opportunistic actions.

The disposition to tolerate the complexity and uncertainty appeared to be an enabling factor to the actor's sensemaking dynamic, permitting him to continue to search out means to deal with and affect an environment that might overwhelm others. This capacity to live with uncertainty, to contain the resulting frustration and anxiety and to be able to wait, perceive and act (rather than react) at the appropriate time pertains to *negative capability*. We interpreted this capacity to tolerate adversity as a necessary condition to the enactment of his *positive abilities* (actual transformations of his environment).

Enactment of Temporary Solution

The PMR employed temporary solutions to deal with urgent, dilemmatic, and/or critical issues (e.g., a violation of the admission protocol to respond to a critical patient that could destabilize the hospital security). He showed humility about his decisions, a capacity to retain an open mind, without overinvesting in the solution adopted, enabling him to perceive their unsatisfactory nature. The PMR was able to reverse decisions when he deemed it necessary (e.g., reinstalling the admission protocol) and maintain a continuous inquiry for more adapted, longer-term solutions (e.g., advocating for other health agencies to fulfill their mandates, and presenting the problem in the budget planning meeting). He remained open to feedback from other actors and readjusted until a sufficiently satisfactory equilibrium was attained (e.g., between two concerns of a dilemma). He was able to see that the solution was imperfect, that opportunities for a permanent resolution were not available, and was able to move forward, remaining open to new opportunities. This shows that a paradox mindset - the extent to which one is accepting of and energized by tensions - can help individuals leverage them to improve in-role job performance and innovation. This also highlights paradox mindset as a key to unlocking the potential of everyday tensions. The PMR's strong vision of his sometimes-contradictory concerns (e.g., to save patients whilst protecting organizational capacity) enables him to enact temporary solutions as acceptable interim compromises.

Situational Opportunity Creation

The PMR had a multitude of preoccupations of which lack of oxygen was just one, although very important, issue to deal with. We gained insight into the complexity he faced via the other problematic issues he identified (e.g., COVID-19 test sampling, managing staff, strike risks due to lack of pay, his standard responsibilities…). Despite conflicting priorities and demands on his resources, the PMR was able to keep the impacts of the oxygen problem at bay using temporary solutions. Doing so, he seemed to be pushing back against the flow to create space in which to focus on the problem. He continuously inquired to find a tenuous equilibrium, which progressively created temporal, mental, and emotional opportunities to act. It culminated in the PMR exposing the problem during an international planning meeting where the idea of the oxygen-generating plant emerged unexpectedly from a colleague's experience. This new perspective generated hope and joy at the prospect of a sustainable resolution to the problem. The building of this plant needed time, human and financial resources, a chance consultation with an expert, a subcontract for construction, organization to train and manage ongoing maintenance and associated significant risks. Without the capability to create situational opportunities, the PMR would not have been able to tackle such a consequential endeavor. We interpret this individual propensity to create situational opportunities as a manifestation of negative capability.

THE PRACTICAL INTEREST OF NEGATIVE CAPABILITY

We argue that developing negative capability can be a relevant objective for crisis management preparedness, training and interventions that focus on human factors. Preparing individuals and teams to face up to confusing scenarios, which are typical of ill-defined problems and crisis situations, involves enabling them to act beyond existing protocols and procedures when found to be ineffective, and to make sense of their situation, especially through abduction (i.e., generating and testing provisional hypotheses), abductive thinking being crucial for operating in highly indeterminate situations (Pettersen, 2013; Weick, 2006). We advocate that developing negative capability is a relevant training objective for crisis management preparedness.

We suggest four training orientations that may help individuals and teams develop negative capability:

1. Providing trainees with simulated crisis experiences to allow them to experiment with how it feels practically, cognitively, and emotionally;
2. Designing and implementing perturbations and ill-defined problems that require trainees to demonstrate tolerance, inquiry, and the creation of opportunities for meaning and action;
3. Helping trainees to establish and project new sensemaking strategies, integrating elements that were unthought-of until then, and resulting in temporary solutions;
4. Debriefing, sharing and debating these strategies to collectively leverage individual initiatives, especially if the trainees are part of the same team, to promote a culture of crisis management within the team.

These orientations need to be implemented and empirically tested in order to evaluate their applicability in authentic training settings, their effectiveness, and their potential for resilience development. If they fulfill these criteria, they could make a compelling contribution to the resilience training literature, which at the moment (i) gives limited insights on how to develop professionals' situated capability to resist and react to one or a series of critical situations, and (ii) needs more transversal and cross-cutting principles for the design of resilience training interventions (Flandin, Poizat, & Durand, 2018).

CONCLUSION

We designed a study that aimed to understand a crisis manager's lived experience at a fine level of detail. This allowed us to explore the relevance of the concept of negative capability in analyzing crisis management within an authentic ecological context. The method used enabled us to document the depth and density of the experience of crisis, and the associated behavior reported by the PMR. We showed that his capacity to deal with the ill-defined problems he encountered did not primarily rely on a positive capacity to follow or break what seem to be ill-adapted rules, but rather on a negative capacity to make situated sufficient compromises dealing with the tension between structural and emergent challenges. We found that negative capability allowed him to navigate and tolerate uncertainty and helplessness, create situational opportunities and use temporary solutions until an innovative and lasting technical solution was found.

This evidence suggests that the concept of negative capability is not only of conceptual interest, as argued for a long time in various research fields, but also of empirical and practical value in the field of human factors, especially regarding crisis management and resilience training.

Further research should contribute to our understanding of how the enactment of negative capability enables crisis managers to cope with unprecedented adverse events, and the extent to which it can be a valuable training and intervention objective. We assume that this research direction holds promise, and might contribute to the field of resilience training for crisis management, and so to both human factors and safety sciences.

ACKNOWLEDGMENT

Simon Flandin and Elleke Ketelaars would like to thank the Swiss National Science Foundation for its support (Grant n° PZ00P1_18503/1).

REFERENCES

Ansell, C. & Bartenberger, M. (2016), "Tackling Unruly Public Problems", in: Governance in Turbulent Times, Oxford University Press, pp. 107–136.

Cooper, M. D. (2022). The Emperor has no clothes: A critique of Safety-II, SAFETY SCIENCE, Volume 152.

Flandin, S., Poizat, G. & Durand, M. (2018). Improving resilience in high-risk organizations: Principles for the design of innovative training situations, DEVELOPMENT AND LEARNING IN ORGANIZATIONS: AN INTERNATIONAL JOURNAL, Volume 32.

French, R. (2001), "Negative capability": Managing the confusing uncertainties of change', JOURNAL OF ORGANIZATIONAL CHANGE MANAGEMENT, Volume 14 No. 5.

Pettersen, K. (2013) "Acknowledging the role of abductive thinking: A way out of proceduralization for safety management and oversight?" in: Trapping Safety into Rules, Bieder, Corinne and Bourrier, Mathilde (Eds.). pp. 107–117.

Poizat, G., Flandin, S., and Theureau, J. (2022). A micro-phenomenological and semiotic approach to cognition in practice: a path toward an integrative approach to studying cognition-in-the-world and from within, ADAPTIVE BEHAVIOR.

Weick, K. (2006). Faith, evidence, and action: Better guesses in an unknowable world, ORGANIZATION STUDIES Volume 27 No. 11.

Williams, M. (2018). The aesthetic development: The poetic spirit of psychoanalysis - Essays on Bion, Meltzer, Keats (2nd ed.). Abingdon: Routledge.

Woods, D. D. (2015). Four concepts for resilience and the implications for the future of resilience engineering, RELIABILITY ENGINEERING & SYSTEM SAFETY Volume 141.