



Enacting project resilience: Insights from Uruguayan air force flight 571's crash in the Andes

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ABSTRACT

In this qualitative study, we examine how project members organize for resilience amid adversity by analyzing the case of the 1972 crash of Uruguayan Air Force Flight 571. The survivors endured 72 days in the Andes, navigating uncertainty, time pressures, interpersonal conflict, and intense emotions—challenges similar to those in modern project organizations. Using insights from the survivors' (auto-)biographies, we conclude that resilience emerges through members' daily social interactions. Our findings reveal three key elements of project resilience: (1) *processing contextuality*, where sensebreaking and adaptive sensemaking evolve as adversity unfolds; (2) *processing communality*, which forms a socio-emotional foundation for resilience; and (3) *shifting between different modes of emergent responding*, by which project organizations harness the stability of structured responses while retaining the flexibility to adapt under pressure. This study highlights the dynamic processes through which project resilience is cultivated, offering insights for managing resilience in high-stakes environments.

1. Introduction

Researchers in organization studies have traditionally focused on resilience within more established organizational structures (Sutcliffe & Vogus, 2003). However, a growing number of scholars are calling for a shift toward investigating resilience in more transient organizational forms (Kutsch & Hall, 2020; Naderpajouh et al., 2023; Piperca & Floricel, 2023; Zhang et al., 2023). Specifically, it is the intersection between projects as temporary organizations (Lundin & Söderholm, 1995) and adversity that provides a “fertile context in which to study resilience” (Naderpajouh et al., 2020, p. 1).

Given the nascent developmental stage of resilience in the project management literature (Naderpajouh et al., 2023), two main theoretical approaches can be differentiated. The first approach draws from capability-based conceptualizations of organizational resilience, commonly found in business and management research (e.g., Duchek, 2020). Similar to resilient organizations, resilient projects are seen as having capabilities that enable them to anticipate, plan, cope, recover, adapt, and learn in the face of adversity (Zhang et al., 2023). While capability-based conceptualizations offer a comprehensive view of project resilience, critics argue that they introduce too many structural preconditions (Piperca & Floricel, 2023), overlooking the “temporary,

non-linear, and complex nature” (Pearson et al., 2023, p. 4) of both adversity and project organizations. Specifically, while these frameworks help differentiate resilient from brittle project organizations (those with or without certain capabilities), they provide limited insight into how project members actively manage and adapt to adversity-induced process losses (see Stoverink et al., 2020).

In response, a second approach to project resilience focuses on temporary organizing as a response to adversity (see Unterhitzberger et al., 2024). Following Weick's (2009) distinction between the static nature of *organization* and the fluidity of *organizing*, this approach to project resilience shifts focus from structural concerns to the project members themselves, recognizing resilience as something actively enacted through interdependent activities in response to adversity (e.g., Caza et al., 2020).

In this article, we examine the mechanisms by which a project organization, formed in response to sudden disruption, organizes for resilience. Recognizing that resilience unfolds as “social behaviors enacted within, and interacting with, an ongoing flow of events and meaning” (Barton & Sutcliffe, 2023, p. 2), we focus on the daily activities of project members, drawing on process-oriented perspectives from the project management literature (Sergi et al., 2020). This approach highlights the complex social dynamics of interrelating and coordinating

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as the project adapts to evolving adversity, emphasizing the lived experiences of project members and their in-situ responses. Accordingly, our study addresses the following research question: *How do project members enact resilience in the face of adversity?*

To address this research question, we investigate the 1972 crash of Uruguayan Air Force Flight 571 in the Andes mountains. This qualitative study examines an unconventional form of project organization by analyzing data from existing biographical accounts of the survivors. In their struggle for survival, the passengers of Flight 571 developed an organizational structure akin to what we might conceptualize as a *soft project* (Crawford & Pollack, 2004; Pollack, 2007). Rather than focusing on traditional aspects of project management, such as formalized planning and control systems, we examine the micro-level interactions through which project members coped with adversity—what Naderpajouh et al. (2020, p. 3) describe as “the hallmark of a resilient system”.

Our study offers several contributions to the project resilience literature. First, we enhance our understanding of project resilience by examining the interplay between sensebreaking and sensemaking, illustrating how project members’ processing of context shapes their responses to adversity. We suggest that adversity is not merely an external threat but, through positive reframing, can spur constructive action among project members. Second, we identify two modes of emergent response—resourceful adaptiveness and impromptu structuring—that enable projects to navigate adversity with both flexibility and effectiveness. By examining the balance between structured planning and spontaneous adaptation, our study highlights a dual capability that strengthens resilient responses. Third, we emphasize the collective socio-emotional management of adversity, revealing that the processing of communality (i.e., cultivating a supportive environment) is not the sole responsibility of managers but involves all project members, forming a core element of resilience. Lastly, our study contributes methodologically by demonstrating the value of unconventional data sources and case studies in advancing project management research.

2. Theoretical background

Kutsch and Hall (2020, p. 4) define a project as “a temporary endeavour with a specific beginning and end. It is characterised by the achievement of unique goals and objectives, and resources are limited.” To distinguish project organizations from their permanent counterparts, researchers propose emphasizing the aspect of temporariness. However, as Winch (2014) notes, no organization is truly permanent as they all cease to exist at some point. Thus, permanence becomes a question of ongoing survival, which, in a volatile, uncertain, complex, and ambiguous world (Millar et al., 2018), should be understood in relative terms. Winch (2014) suggests that project organizations should be described as determinate, with a defined end, whereas other types of organizations are indeterminate. The distinction is that members of project organizations know from the outset that their structure will conclude at a set time, whereas other organizations do not face this limitation. This predetermined lifespan makes project organizations highly action-oriented and task-focused (Lundin & Söderholm, 1995; Majchrzak et al., 2007), and therefore a suitable means to navigating adverse situations and contexts (Pearson et al., 2023).

Given that project organizations frequently face challenging types of adversity (Zhang et al., 2023), it is not surprising that resilience has become a central theme in the project management literature (Naderpajouh et al., 2020). In this context, De Waard and Kalkman (2022) conducted a literature review on extreme context studies in project management journals, identifying a surprising number of studies ($n = 62$) that theorize in and for contextual conditions that exceed the ordinary. However, the field of project resilience suffers from the diffuse nature of the concept, with researchers drawing on diverse, sometimes conflicting, theoretical assumptions (Naderpajouh et al., 2023). In their recent study, Piperca and Floricel (2023) outline three common theoretical perspectives on project resilience. The first views resilience as

strategic actions focused on preemptively managing risks. The second considers resilience from a *complex systems* perspective, treating it as an inherent, structural property that evolves within project organizations. The third sees resilience as an *ongoing process* in which project organizations anticipate, cope with, and adapt to adversity.

The latter perspective is particularly influenced by business and management literature. Authors such as Williams et al. (2017) and Duchek (2020) conceptualize resilience as a process of positive adaptation that enables organizations to maintain functioning before, during, and after adversity. They argue that resilient organizations maintain their function by developing and utilizing specific capability endowments related to the outlined stages of the overall resilience process, which shape their capacity for resilience.

Drawing on these insights, project management scholars defined project resilience as “the capacity to organise under a variety of scenarios, including disruptions in the form of shocks or stressors” (Naderpajouh et al., 2020, p. 5). Zhang et al. (2023) conducted an extensive study combining literature reviews, surveys, and interviews to identify the capabilities underlying project resilience. Their findings, in line with Duchek’s (2020) general resilience framework, suggest that the resilience of project organizations depends on capabilities in anticipation (e.g., clarifying roles), coping (e.g., establishing organizational structure), and adaptation (e.g., feedback and learning). This perspective focuses on structural forms that are established before adversity strikes, implicitly assuming these structures are the foundation for resilience (Barton & Sutcliffe, 2023). It is grounded in a *Cartesian paradigm* (van der Hoorn & Whitty, 2015), where project resilience—like much of traditional project management—is driven by a focus on efficiency (Sergi et al., 2020). Eklund and Simpson (2020) further argue that project management scholarship reflects Taylorism, emphasizing rational decision-making, standardization, risk management, and instrumental outcomes (see Hodgson & Cicmil, 2008). This Cartesian worldview limits project resilience research by treating processes as linear, goal-oriented sequences, with stability seen as a return to the status quo after adversity-induced process loss (Sergi et al., 2020). This perspective also neglects the unique nature of project organizations as “temporarily recurring yet inherently fragile patterns of relating, which require maintenance efforts continually, not just after perturbations” (Piperca & Floricel, 2023, p. 3). As a result, current research overlooks the everyday actions through which project members continuously reproduce their organization as they navigate adversity (Brunet et al., 2021).

To improve our understanding of the lived experience of project members—and how resilience is enacted in situ—Cicmil et al. (2006) argue for a shift away from traditional normative approaches to project management, advocating instead for a focus on “practical action, lived experience, quality of social interaction and communicative relating.” They call this the actuality of projects, which emphasizes the complex social processes, interactions, and power dynamics in projects, recognizing that projects are not merely technical tasks but are embedded in a broader social context. Research on project actuality, similar to research that considers project management from an ontological perspective of becoming, draws inspiration from Weick’s process thinking in organizational studies. As Weick (2009, p. 7) suggests, we must “acknowledge impermanence” as a guiding principle when theorizing about resilience. This does not imply an either/or relationship between the stable aspects of organization and the fluid aspects of organizing but rather emphasizes a symbiotic, both/and relationship (Bakken & Hernes, 2006). In doing so, the view presented in this paper considers both perspectives on project resilience (capacity and process) to be complementary and thus to jointly contribute towards our understanding of project resilience. Accordingly, project resilience emerges transiently as social behaviors, as actors create and recreate structure in their ongoing struggle with adversity.

By focusing on the acts of organizing for resilience, rather than fixed structural assumptions, we can open the “black box” of resilience

processes (Raetze et al., 2021). This approach helps us understand how resilience is brought to life through the ongoing activities of project members, rather than relying on pre-programmed responses. Since “resilience is something we do, and not just something we have” (Caza et al., 2020, p. 349), this paper seeks to uncover the underlying resilience processes, contributing to our understanding of how project members enact and re-enact resilience in the face of adversity.

3. Methodology

Given that the study of the resilience of project organizations requires further theorizing (Naderpajouh et al., 2023), we decided to adopt an exploratory qualitative research approach (Edmondson & McManus, 2007). More precisely, we conducted an in-depth qualitative case study of a project-like organization that emerged in response to an unexpected and extreme event. Case study research offers an open and flexible approach well-suited for analyzing social and behavioral issues (Yin, 2018) and generating fresh insights into adversity-related processes in organizations (Buchanan & Denyer, 2013). Our selected case is the 1972 Andes plane crash of Uruguayan Air Force Flight 571, following which the surviving members had to organize themselves for 72 days before they could escape. While this survivor group may not account for a classic project organization, we argue that scholars interested in project resilience can learn a lot from this particular case and extreme cases in general. The temporary structure enacted by the survivors has several similarities with more classic projects. Moreover, given that this structure was established in situ without any established capabilities and action patterns, this case allows us to investigate project resilience as a socially enacted and emergent process (see Buchan & Simpson, 2020) instead of a set of repetitive and mechanistic routines. Within the following section, we will provide deeper insights into the value of analyzing extreme cases for (project) management research and why similarities between the survivor group and more classic project organizations exist.

3.1. Context and case selection

Scholars have long developed theories based on extreme cases (e.g., Vaughan, 1990; Weick, 1990; Weick, 1993), though the unique advantages of studying such contexts have only recently gained explicit recognition. Hällgren et al. (2018, p. 112) argue that extreme contexts “provide a unique platform for the study of hard-to-get-at organizational phenomena” such as adaptation, prioritization, and resilience processes. Similarly, research in project management has shown that extreme cases can reveal valuable insights into phenomena that might remain unnoticed in traditional project settings (Aegerter Alvarez et al., 2011; Hällgren, 2007; Hällgren et al., 2018). In their comprehensive review of extreme context studies in leading project management journals, De Waard and Kalkman (2022) conclude that these settings address many of today’s pressing challenges (e.g., environmental disasters) and can thus “provide insights into project management under less extreme conditions” (p. 887).

We argue that the structure created by the survivors of Flight 571 exemplifies how extreme contexts can inform project management and resilience research. In their battle for survival, the passengers of Flight 571 exhibited characteristics akin to those of a temporary organization, as defined by Lundin and Söderholm (1995). The authors identify four core dimensions: (1) time, (2) task, (3) team, and (4) transition. First, temporary organizations are defined by their limited duration (Winch, 2014), with the survivor group existing in its specific form for 72 days before disbanding. Second, Bakker (2010) emphasizes that the core purpose of a temporary organization is its task, with survival being the urgent, time-sensitive goal for the survivors. Third, temporary organizations consist of interdependent actors working toward a shared objective, as demonstrated by the survivors’ need to cooperate for survival. Finally, transition reflects “actions that lead to transformation”

(Lundin & Söderholm, 1995, p. 475), evident in how a group of devastated individuals evolved into capable survivors. While not all temporary organizations are projects (Jacobsson et al., 2015), the structure of the survivor group also shares many features with classic project organizations, particularly those classified as *soft projects* by Crawford and Pollack (2004). While most conceptualizations of project organizations see formalization (i.e., formal planning and control methods like project plans, the Critical Path Method, or the Program Evaluation Review Technique) as a core requirement, Crawford and Pollack (2004) provide a framework that situates projects on a continuum across various dimensions, distinguishing between projects that have more hard and more soft characteristics. In contrast to the hard paradigm to project management, where project objectives and the means to achieve them are clearly defined, the soft paradigm acknowledges how real-world complexities can inhibit the precise definition of goals and methods. As project members are not simply confronted by predictable problems to which a “best” solution is already defined, but rather with complex sets of interdependent problems and opposing interpretations, situational understanding can only be generated through project members’ interpersonal relating and qualitative engagement with one another (Crawford et al., 2003).

While most projects include both hard and soft aspects, research has shown that some projects, such as organizational change projects, tend to lean toward the softer end of the spectrum due to the challenges of defining the project and its goals, as well as their reliance on subjective interpretation and judgment (Crawford & Pollack, 2004; Sankaran et al., 2009). Deploying soft projects typically requires a participatory approach, iterative planning, and strong stakeholder engagement. In doing so, project members engage in an ongoing process characterized by open communication, alignment of expectations, and feedback loops to create meaning and subsequently engage in purposeful action to achieve the project’s goals (Crawford et al., 2003). Tables 1 and 2 display in detail what the organization of the survivors has in common with general project organizations and soft projects in particular.

Given that soft aspects of project work—such as relational dynamics, team cohesion, and adaptability—are increasingly recognized as key success factors (Crawford & Pollack, 2004), but are often overlooked by project managers due to their more diffuse nature (Wateridge, 1999), we argue that studying the survivors’ emergent organization “provid[es] a ground for learning about projects” (Jacobsson & Hällgren, 2016, p. 588), particularly regarding the social dynamics of resilience that organically emerge from human interaction (De Waard & Kalkman, 2022).

3.2. Data sources

In analyzing how the survivors organized for resilience, we used a combination of primary and secondary historical accounts. Scholars studying phenomena in extreme settings face several methodological challenges, such as potential trauma elicitation for researchers in the field (Jané et al., 2022), difficulty accessing information from traumatized individuals (James et al., 2011), and, at times, limitations on physical presence for direct observation (Buchanan & Denyer, 2013). Recognizing these challenges, Rouleau (2023) argues that studying extreme contexts “requires us to change the way we do research”. In line with this argument, extreme context scholars increasingly leverage non-traditional or atypical data sources, such as documentaries (e.g., Danner-Schröder & Sele, 2023), fiction (e.g., Hällgren & Buchanan, 2020), archival and media records (e.g., Quinn & Worline, 2008), and biographies (e.g., Hällgren, 2010). Weick’s (1993) seminal work on sensemaking, based on Norman Maclean’s *Young Men & Fire*, highlights the value of historical (biographical) narratives for investigating collective behaviors in extreme settings (e.g., Aegerter Alvarez et al., 2011; Jacobsson & Hällgren, 2016). More precisely, analyzing biographies offers several unique advantages for management and organization scholars. First, the abundance of narratives in certain cases enables a

Table 1

The Andes survivors in comparison to more common project organizations (adapted from Jacobsson & Hällgren, 2016).

Feature	Andes survivors	Construction projects as temporary organizations	Similarities
Time	Time-bound: continued survival is limited by deteriorating physical conditions	Time-bound: I.e. 1st of Jan.–30th of Oct.	Both are limited by time constraints, requiring prioritization and management of actions
Task	Achieve survival and rescue through self-organization	The erection of a building	Both have a clear, unique task with evolving objectives in response to new conditions
Team	Survivor group, emergent leaders and structure, interdependent roles	The project team	Both operate as teams with role flexibility and strong interdependence for success
Transition	From surviving to eventual rescue	From timber to building	Both involve a transformative journey or process from a starting state to a defined end state
Interdependence	Cross-functional, mutual	Cross-functional, sequential	Success depends on teamwork and mutual reliance on individual roles
Cost	Limited resources: food, energy, material	People, resources, etc.	Both manage limited resources with careful allocation to achieve the task
Planning Methods	Reactive, dynamic adaptation to changing survival conditions	The project plan and the resources to acquire it	Both involve planning, although classical project work is mostly formal and pre-planned, the other reactive and adaptive
Control Methods	Informal, improvised controls to manage resources and survival (e.g., rationing, trekking for help)	Project plan, work breakdown structure, earned value, CPM, PERT, etc.	Both use control methods to monitor progress and manage resource use, differing in their degree of formality
Risk Management	Continuous risk management with immediate adjustments (life-threatening risks)	The identification and mitigation of i.e. late logistics	Both continuously manage risks and adjust strategies in real time to mitigate them
Management Task	Managing survival strategies, allocating roles and tasks dynamically	Logistics, stakeholders, subcontractors, clients, etc.	Both involve managing people, resources, and logistics to achieve the set goal

robust cross-account analysis of events (Hällgren, 2010). Second, narratives present a sequential recounting of events (Rhodes & Brown, 2005), with autobiographies providing an in-depth chronicle of an individual's lived experiences (Jones, 1998). As Fillis (2006, p. 200) notes, the biographical approach is “truly longitudinal in nature,” enabling a holistic rather than fragmented interpretation of events. Third, biographies are grounded in factual history, revealing individuals' motives and personalities as well as the ways these aspects influenced and were influenced by their interactions with others (Jones, 1998). Accordingly, our dataset includes all published autobiographies ($n = 6$)

written by the surviving members of the Andes plane crash, sometimes with the assistance of other writers, and one second-hand biographical account compiled through interviews with the survivors. The latter was published in 1974, and thus shortly after the events. Table 3 provides an overview of the data sources analyzed.

3.3. Data analysis

Using established methods for inductive theory development (Corbin & Strauss, 2015; Gioia et al., 2013), the data analysis involved several iterative steps. Initially, the first author went through each available written survivor account, searching for recurring themes, similarities and differences in the survivors' experiences, and their behavioral patterns as they individually and collectively coped with the extreme context. Highlighted text passages included, among several others, explanations about how the survivors created structure through the division of roles, their ingenuity in dealing with available material, descriptions of personal and shared sacrifice, and stories of interpersonal conflict and its resolution. This process resulted in 152 standard type-written pages (57,705 words) containing text excerpts, which were then imported into MAXQDA—a program for computer-aided data analysis—for further analysis and coding. In coding the text excerpts, we primarily relied on using the survivors' terminology, resulting in 343 in-vivo codes.

In the initial analytical step, the first author examined the similarities and differences between coded passages, organizing them into higher-level nodes. For instance, text excerpts discussing the evolving hazards of the cold, expansive mountain range were categorized into a node labelled *inhospitable environment*. During this step, we tried to retain the language used by the survivors in their respective biographies. By consistently comparing how the survivors described similar experiences, we identified a set of first-order concepts. Examples of these concepts include *adversity-induced recognition to act*, *routinization of tasks*, and *emotional togetherness*.

In a second analytical step, the first author identified links among the first-order concepts, grouping related concepts into theoretically distinct clusters, or second-order themes. This was a recursive process of constantly moving between codes, concepts and emerging themes, resulting in a set of six second-order themes: (1) *sensebreaking*, (2) *adaptive sensemaking*, (3) *resourceful adapting*, (4) *impromptu structuring*, (5) *compassionate relating*, and (6) *respectful interacting*.

The final step of data analysis involved organizing the second-order themes into aggregate dimensions that underlie our theorizing. Three dimensions emerged from this step. The first dimension—*contextual processing*—reflects how the members of the project organization continuously and repeatedly re-established their ability to deal with the adverse contextual conditions. The second dimension emphasizes the different modes of *emergent responding* that project members employed to mitigate adversity. The third dimension—*communality processing*—emphasizes how the members of the project organization engaged in acts of socio-emotional becoming, enabling them to deal with the adverse conditions in a shared, collectivistic manner (see Fig. 1).

We relied on two techniques to ensure the reliability and trustworthiness of our analysis. First, we gave the codes to two other researchers and asked them to match the existing first-order codes to the second-order themes proposed by us. For instances of substantial deviations, the first author met with the respective researcher to discuss the reasons for the deviating assignment to possibly adjust the resulting data based on this feedback and modify codes and categories until an agreement was reached. Second, once authors were done theorizing the data, they repeatedly presented their analysis and results to other researchers to help gauge the comprehensibility and plausibility of the analysis.

Table 2
Dimensions of hard and soft projects.

Dimension	Characteristics of hard projects	Characteristics of soft projects	Andes survivors	Categorization
Goal Clarity	Goals / objectives are clearly defined	Goals / objectives are ambiguously defined	Goals were clearly defined (survival, rescue, and escape)	Hard
Goal Tangibility	Physical, tangible artifacts	Abstract, with intangible results	Abstract, with tangible result (rescue/survival)	Hard/Soft
Success Measures	Quantitative measures of success that reflect objective reality	Qualitative success measures based on subjective interpretation	Success based on survival (qualitative)	Soft
Project Permeability	Highly impermeable to external influences	Highly permeable to external influences	Highly permeable to external influences (weather, resources)	Soft
Number of Solution Options	Focus on optimizing a predetermined solution	Multiple alternative and sometimes conflicting solutions. Focus on learning, debate, participation, exploration and questioning of basic assumptions	Multiple alternative solutions (waiting for rescue, exploring, expeditions)	Soft
Participation and Practitioner Role	Non-participative, clear boundaries between roles and tasks	Participative approach towards finding solutions that relies on mutuality and shared expertise,	Highly participative, sharing roles and responsibilities	Soft
Stakeholder Expectations	The focus is on logical relationships between project elements. People are interchangeable and act in predictable ways	Clear focus on the centrality of the people involved and their individual expectations, desires, values, roles, and norms of action	Focus on people's well-being, cooperation essential for survival	Soft

Table 3
Survivor (auto-)biographies.

(Auto-)biography	Main author	Survivor
Into the Mountains: The Extraordinary True Story of Survival in the Andes and its Aftermath	Algorta, Pedro	X
I Had to Survive: How a Plane Crash in the Andes Inspired My Calling to Save Lives	Canessa, Roberto	X
Memories of the Andes	Inciarte, Jose Luis	X
After the Tenth Day	Páez, Carlitos	X
Miracle in the Andes	Parrado, Nando	X
Alive: The Story of the Andes Survivors	Read, Piers	
Out of the Silence: After the Crash	Paul Strauch, Eduardo	X

4. Research setting: the Andes flight disaster

On October 13, 1972, a Uruguayan Air Force Fairchild FH-227D aircraft, carrying 45 passengers—including the flight crew, members of the Old Christians Rugby Club, their friends and family, and some strangers—crashed into the Andes Mountains. The rear section of the plane was torn away upon impact, and several passengers immediately lost their lives. Inside the fuselage, survivors were thrown several hundred meters down the mountainside before coming to a sudden stop. The situation was disastrous. Many were dead or missing, and others suffered due to severe injuries. Stranded at an altitude of approximately 3500 m (11,483 feet) only in summer clothing, the survivors had to adapt quickly to the extreme conditions. Initially, they believed that rescue was imminent. However, as days passed, it became clear that they were trapped in one of the most inhospitable environments on Earth. In addition to injuries and illnesses, they faced constant psychological strain because of freezing temperatures, high altitude, and shortage of food and water. After ten days, they learned via a functioning radio that the search for them had been called off. With no food left and no hope of rescue, they decided to resort to necrophagy to survive. On October 29,

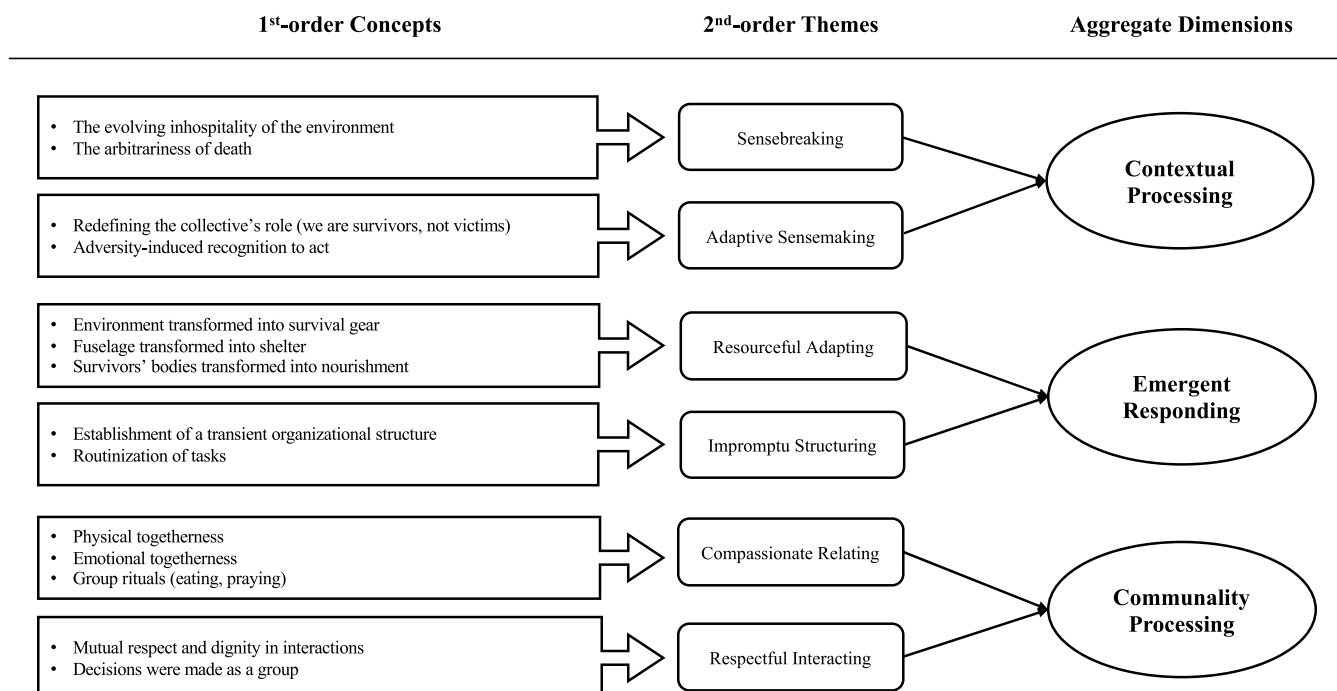


Fig. 1. Data structure.

17 days after the crash, another disaster struck. An avalanche buried the fuselage, where the survivors were sleeping. They were trapped in the dark, snow-covered wreckage for two days before they manage to free themselves. With no hope of external rescue, they decided to send their strongest members to find help. Preparations, setbacks, and the general weather conditions made it impossible to start looking for help until December 12—over two months after the crash. Finally, Nando Parrado and Roberto Canessa, two of the fittest survivors, hiked for ten days through the brutal terrain, enduring frostbite, snow blindness, and starvation. Finally, on December 20, they encountered a Chilean shepherd, who alerted authorities. Within 48 h, the remaining survivors were rescued by helicopter. Of the original 45 passengers, 16 survived. Fig. 2 provides a timeline of their 72-day ordeal.

5. Findings

The analysis of the survivors' written accounts reveals several key processes involved in enacting project resilience. Confronted with adversity, the survivors found themselves locked in a constant struggle between the disruption of their previously established sense of reality and the creation of a new situational understanding. By processing their own contextuality and realizing that they were not passive victims but active participants in shaping their collective future, the survivors increasingly engaged in emergent responses to adversity. These responses alternated between improvised and more structured approaches, with the survivors striving to routinize previously spontaneous solutions—only to be forced to adapt again as new challenges arose. Additionally, the survivors' project organization established a socio-emotional foundation for resilience. In constantly processing socio-emotionality, the survivors aimed to foster and sustain interpersonal relationships, reflecting every member's active commitment to each other. Table 4 offers a summary of our findings, which includes representative first-order data that support the emerging concepts and themes.

5.1. Contextual processing

5.1.1. Sensebreaking

The harsh reality of being stranded in a remote mountain range immediately exposed the survivors to extreme environmental conditions. Temperatures frequently plunged well below freezing, a challenge compounded by the fact that they were only equipped with summer clothing. Carlitos Páez recalls the devastating scene that unfolded in the first hours after the crash:

That first night was like hell itself; dead people, broken bones, snow, freezing cold, blood everywhere and mental breakdowns in some of us. (Páez Rodríguez & Campodónico, 2019, p. 31)

The crash itself created a vacuum of meaning for those who were still alive. In the immediate aftermath of the crash, the survivors were confused about what was actually happening. Moments before, they were on their way to Chile, and now they found themselves in a burning wreckage in the middle of a frozen ocean:

Until that moment, my friends and I had been living in a predictable universe. Then, all of a sudden, there was a tear in the expectations of our lives—and we were left adrift in an eternal limbo where time neither begins nor ends. (Canessa & Vierci, 2017, p. 7)

While the stark contrast between the life they were living and the horrifying realization of the tragedy unfolding before their eyes caused an immediate breakdown of sense, the survivors took comfort in the firm belief that rescue was only hours away. However, the expectation “that they would come to rescue us at any moment” (Inciarte, 2020, p. 36) was no more than a fragile dream, soon to be shattered by a working radio that brought the tragic news to the survivors that the search-and-rescue mission had been called off, once again breaking the sense they had so carefully constructed in the days prior:

It was terrible news, news that we didn't want to hear. Several were mentally devastated including the captain of the team who put all his strength into maintaining the motivation of those hoping for a prompt rescue. (Algorta, 2016, p. 40)

One of the main problems with the breakdown of sense is that it is not necessarily a one-time event. As adversity continues, new situations arise that have the potential to disrupt previously established mental models of what is going on. As with the survivors, after some time they regained something like a stable state of functioning. As they worked toward their escape, the number of deaths began to slow. They believed that they were now in control of adversity, not the other way around. However, the sheer force of nature soon showed them that they could never feel safe. One night, an avalanche buried the remaining survivors alive. Others lost their lives, and those still alive were buried under the snow for several days in complete darkness:

It is hard to describe the depths of the despair that fell upon us in the wake of the avalanche. The deaths of our friends staggered us. We had allowed ourselves to believe that we had passed the point of danger, but now we saw that we would never be safe in this place. The mountain could kill us in so many ways. What tortured me most was the capriciousness of death. How could I make sense of this? (Parrado & Rause, 2006, p. 133)

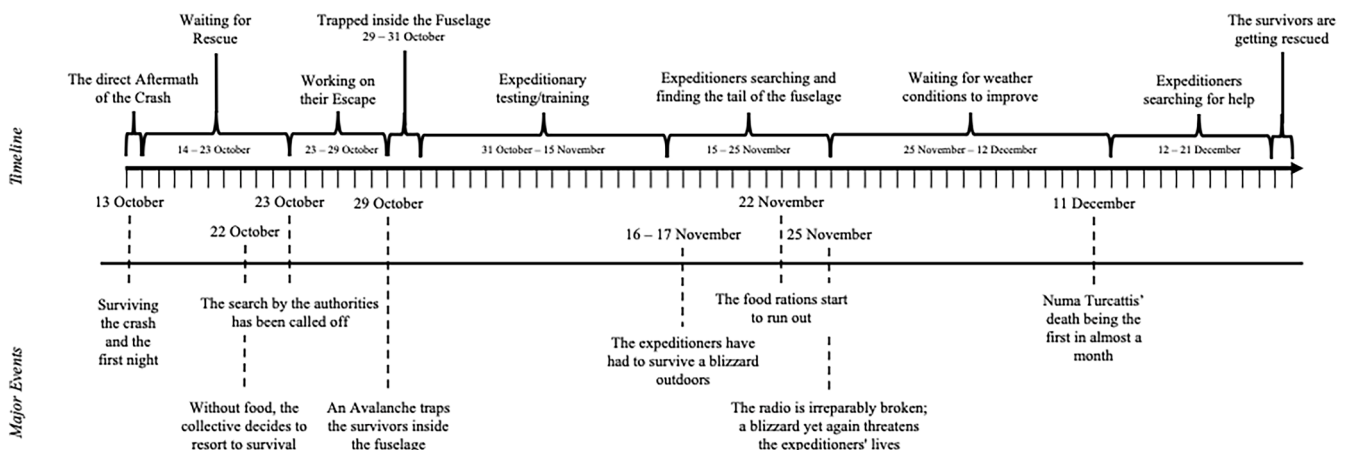


Fig. 2. Timeline of the events.

Table 4
Dimensions, themes, categories, and data.

Second-order themes & first-order categories	Representative data
Overarching Theoretical Dimension: Contextual Processing	
1. Sensebreaking <i>The evolving inhospitability of the environment</i>	I would never pretend to know what might happen next. The rules here were too savage and strange, and I knew I could never imagine the hardships, setbacks and horrors that might lie ahead. So I would teach myself to live in constant uncertainty, moment by moment, step by step. (Parrado & Rause, 2006, p. 112)
<i>The arbitrariness of death</i>	The arbitrariness of all these deaths outraged me, but it frightened me, too, because if death here was so senseless and random, nothing, no amount of courage or planning or determination, could protect me from it. (Parrado & Rause, 2006, p. 134)
2. Adaptive Sensemaking <i>Redefining the collective's role (we are survivors, not victims)</i>	It was terrible news, news that we didn't want to hear. Several were mentally devastated including the captain of the team who put all his strength into maintaining the motivation of those hoping for a prompt rescue. But now it was clear that they were not going to come and rescue us, we had to start doing some things differently, we were going to have to survive and get out of there on our own. (Algorta, 2016, p. 40)
<i>Adversity-induced recognition to act</i>	The avalanche reinforced the belief that we would have to mount our own expedition to get off the mountain because it was clear that nobody was going to come looking for us. We had to continue doing what we had been doing to keep ourselves alive, but now it was clear that we had to take charge of the situation and dedicate more effort to getting out by ourselves. (Algorta, 2016, p. 54)
Overarching Theoretical Dimension: Emergent Responding	
3. Resourceful Adapting <i>Environment transformed into survival gear</i>	The first thing that struck Fito Strauch in those early days was the problem of thirst: Although we were surrounded by snow, attempting to drink it irritated our gums and made our tongues and throats swell. The method he discovered for melting the snow was as simple as it was ingenious. He set a thin layer of ice on a sheet of aluminum from the back part of the seats, twisted it into a funnel out in the sun, and let it drain into a bottle. (Canessa & Vierci, 2017, p. 24)
<i>Fuselage transformed into shelter</i>	We invented ways to make water and shelter for ourselves, and we managed to turn the remains of the fuselage into a refuge that, although miserable, was our only possession on the mountain and even began to feel a little like a home. (Strauch & Soriano, 2019, p. 43)
<i>Survivors' bodies transformed into nourishment</i>	We needed a way to survive the long nights without freezing, and the quilted batts of insulation we'd taken from the tail section gave us our solution. (Parrado & Rause, 2006, p. 171)
4. Impromptu Structuring <i>Establishment of a transient organizational structure</i>	The chaos had to be sorted out so, almost immediately after the crash, we began to arrange a minimum form of organization to the best of our abilities. (Páez Rodríguez & Campodónico, 2019, pp. 39–40)
<i>Routinization of tasks</i>	As the days went by we entered into a routine and started to adjust to the mountain. Without much deliberation, the group was functioning and it began to structure itself around the work. The activities of attending to the injured, of making water, of creating protection from the elements, and of preparing the fuselage as a nightly refuge, served to clarify roles and present organizational alternatives. (Algorta, 2016, p. 30)
Overarching Theoretical Dimension: Communality Processing	
5. Compassionate Relating <i>Physical togetherness</i>	Experiencing the human warmth that saved us from a frozen death, aware of the importance of

Table 4 (continued)

Second-order themes & first-order categories	Representative data
<i>Emotional togetherness</i>	another's life for one's own survival [...]. (Inciarte, 2020, p. 10) In that way, some quickly, and others more gradually, took the decision to turn to the bodies for food. I witnessed a pact; the most honourable, dignified, and sincere pact that I have ever seen or been part of, where men pledged to offer themselves to each other in the event of their death, so that the others could live. A pact of deep love between men; love more than feeling. Love realized by human behavior; and which expresses all human condition, hence the pride I felt and feel in being a man. (Inciarte, 2020, p. 38)
<i>Group rituals (eating, praying)</i>	I was the one who persuaded the rest to pray "the Rosary," in the mountains. We prayed all together once a day, it became a ritual for the group. It also contributed to soothe and calm us, beyond the prayer and the chanting. (Páez Rodríguez & Campodónico, 2019, p. 76)
6. Respectful Interacting <i>Mutual respect and dignity in interactions</i>	Even though feeding oneself was the most basic instinct, we never competed to the point of killing one another. On the contrary, there was always dignity, we always respected one another, we did our utmost to collaborate, and also the solidarity arose from our own individual feelings of wanting to stay alive, in the end that made us persevere and behave as a team. The survival instinct is individual, but we realize that in order for each individual to be saved, he had to work with the others. (Algorta, 2016, p. 86)
<i>Decisions were made as a group</i>	The group was like a government that decided what steps the community was to take to foster everyone's welfare. There was no place for individualism. (Páez Rodríguez & Campodónico, 2019, p. 106)

5.1.2. Adaptive sensemaking

However, their environment was not just a persistent threat; it also served as a catalyst for collective and repeated sensemaking, thereby prompting the survivors to take immediate and continuous action. Shortly after the crash, the survivors, using a functional radio, discovered that the search for them had been called off. Faced with the grim reality that no one was coming to their rescue, what could have been a devastating realization instead ignited a glimmer of hope within the survivors. Instead of depending on outside assistance, they could now focus on devising their own plan to escape the harsh mountain landscape:

On the afternoon of October 23rd, that is, ten days after the accident, Gustavo Nicolich went into the plane. He had been listening to the radio. He looked at me and said: "I've got good news for you; the search is over, they are no longer looking for us." My insulting answer to his words is very clear in my memory. How could he say that this was good news? Had he gone mad? I felt like punching him. Nevertheless, his answer was the perfect summary of our attitude from then onwards. The radical change we would have to adopt. He answered: "I'm saying that is good news because from now on we have no one to depend on but ourselves." He was right. It was good news. From then on, we were driven by something else. (Páez Rodríguez & Campodónico, 2019, p. 45)

Despite the survivors increasingly viewing themselves as in charge of their own future, desperation continually resurfaced. One of the most pressing issues was the rapid decline in available food supplies: "We are starving [...]. Our bodies are consuming themselves" (Parrado & Rause, 2006, p. 96). Facing the dual threats of cold and starvation, some began to contemplate the unthinkable. They considered whether the bodies of their deceased companions could serve as a last-resort food source. After

an expedition to survey the vicinity of the crash site, one survivor approached Eduardo Strauch to broach the idea of resorting to necrophagy:

He had seen with his own eyes how insignificant the white fuselage was, how from a few hundred yards above, it became almost invisible in the immensity of the valley. When he returned, he took the first opportunity he had to tell me: “They’ll never be able to see us. It’s basically impossible for them to find us. We’re going to have to eat the bodies.” (Strauch & Soriano, 2019, p. 27)

Since the bodies were those of friends, family, and in some cases, strangers who had died either during the crash or shortly thereafter, the decision to consume them could not be made by any one person. Rather, it required a collective agreement. Therefore, the survivors came together to discuss the implications of such a course of action:

And so, in small groups at first, and then in a general meeting, twenty-year-old boys begin to argue from a legal, moral, religious, theological, and above all from a nutritional, point of view, about the need for all of us to use the dead bodies, empty of their souls, as food. (Inciarte, 2020, p. 38)

The survivors’ decision to utilize the deceased bodies as nourishment was facilitated by the growing realization that those still alive were not merely empty shells awaiting their demise, but active participants within the contextual conditions. This reinterpretation of their own contextuality culminated in the survivors adopting the collective identity of “The Society of the Snow” (e.g., Canessa & Vierci, 2017, p. 18; Inciarte, 2020, p. 25; Strauch & Soriano, 2019, p. 43). By identifying themselves as members of a society residing in the mountains, the group began to recognize their shared responsibility for one another. This realization furthered their sense of not being isolated beings in the vast mountain range who simply had to endure the extreme conditions, but they recognized the need to actively shape the contextual conditions and take matters into their own hands:

The definition of survivors, from that moment on would become vastly inappropriate. We grew out of it. And it did not have anything to do with our reality. One who survives waits passively, he has given in to fate. Finding it impossible to make an effort to escape from his circumstances, he will feel that the dice have been thrown, unless someone from outside steps in to free him and helps him start walking again. In that sense, to survive is almost a synonym of non-existence, or the prior state to no longer Being. After day 10, we all deserved to be called by a truer name. I cannot think of any neologism to express our change of attitude more clearly. For this reason, I would like to say, we moved on to play a more active part: we were “living beings” in the strictest sense. Actually, we were more alive than ever. We existed, and we were determined to let the world know. (Páez Rodríguez & Campodónico, 2019, pp. 45–46)

5.2. Emergent responding

5.2.1. Resourceful adapting

In addition to repurposing the fuselage as a refuge, the survivors adapted to their surroundings by harnessing the myriad of materials strewn about them. The crash had dispersed the materials of the plane as much as passengers’ personal belongings, which the survivors resourcefully transformed into makeshift tools:

That’s why, if we understand creativity as the ability to transform whatever is available in order to create new things, whether tangible or intangible, I believe we were extremely creative in the Valley of Tears, and our inventiveness, like so many other skills was enhanced in that desolate situation. (Strauch & Soriano, 2019, p. 110)

Given the escalating challenges posed by the extreme environment, the survivors had to be continually adaptive. Upon using the fuselage as

their sanctuary, they faced another problem: the snow was too soft to walk upon, causing some to sink up to their waists. However, a few quick-thinking survivors soon devised a solution:

Shortly after the crash, when we were struggling to walk in the deep, soft snow surrounding the fuselage, Fito realised that if we tied the cushions of the Fairchild’s seats to our feet with seat belts or lengths of wire cable, they would serve as makeshift snowshoes, and allow us to walk without sinking into the snow. (Parrado & Rause, 2006, p. 67)

Roberto Canessa further demonstrated the survivor group’s adaptability in the dire situation. Recognizing the imminent threat of the dropping temperatures as night approached, he repurposed the upholstery from the airplane seats, fashioning them into makeshift blankets to retain body heat.

Some of the boys were still dressed in short-sleeved shirts [...]. They also pummeled and massaged one another. This seemed the only way to keep warm until Canessa had the first of his ingenious ideas. He found, by examining the cushions and seats which lay all around them, that the upholstery, which was turquoise and made of brushed nylon, was only held to the seats by a type of zipper. It was quite simple to remove the coverings and, once removed, these made small blankets. They were pitifully inadequate protection against subzero temperatures, but they were certainly better than nothing. (Read, 1974, p. 36)

Moreover, the survivors didn’t just stop there. They utilized a multitude of different materials to address the problems that came with being stranded:

Women’s perfume became disinfectant, razor blades scalpels. Rugby jerseys became bandages. (Canessa & Vierci, 2017, p. 24)

Despite addressing several immediate concerns, the group still faced the pressing issue of water supply. Uncertain of how long their entrapment on the mountain might last, they had only a limited amount of water. Fito Strauch ingeniously devised a solution to this problem, ensuring the group’s hydration throughout their 70-day ordeal on the mountain:

The first thing that struck Fito Strauch in those early days was the problem of thirst: Although we were surrounded by snow, attempting to drink it irritated our gums and made our tongues and throats swell. The method he discovered for melting the snow was as simple as it was ingenious. He set a thin layer of ice on a sheet of aluminum from the back part of the seats, twisted it into a funnel out in the sun, and let it drain into a bottle. (Canessa & Vierci, 2017, p. 24)

Through their ingenuity, the group of survivors realized that they were not simply at the mercy of the extreme environmental conditions, but that they were active participants capable of using contextual materiality to make their stay on the mountain range as manageable as possible.

5.2.2. Impromptu structuring

When the survivors started acknowledging in what kind of dire situation they found themselves in, they realized that “the chaos had to be sorted out” so they immediately “began to arrange a minimum form of organization” (Páez Rodríguez & Campodónico, 2019, pp. 39–40). Especially notable was Marcelo Perez, the captain of the rugby team, who immediately after the crash organized those with minor injuries to rescue the remaining passengers within the fuselage:

The rescue operation he quickly organised saved the lives of many people who were pulled from the tangled seats, and without the sheltering wall he built that first night, we all would have frozen to death by morning. (Parrado & Rause, 2006, p. 63)

To mitigate the disruptive environment they faced, the survivor

group gradually established a more structured organization. Several smaller teams emerged over time, each with its own tasks and responsibilities:

The first group was the medical team [...]. The second group were those who were put in charge of the cabin. [...] It would be their duty to keep the cabin tidy, to prepare it at night by laying cushions on the floor, and in the morning to dry in the sun the covers of the seats which they had used as blankets. The third team was the water-makers. Their only difficulty was in finding uncontaminated snow, for around the plane it was pink from the blood of the dead and wounded, and polluted by oil from the plane and by urine. (Read, 1974, p. 48)

Despite their impromptu emergence amidst disruption, these teams demonstrated a structured approach by considering the diverse skill sets of their members. The medical team, comprising Roberto Canessa, Gustavo Zerbino, and Diego Storm, consisted of individuals in the early stages of their medical education. Despite their relative inexperience, they effectively applied their existing medical knowledge to aid the injured. The cabin crew primarily comprised individuals capable of physically handling the wreckage, including lifting scattered debris, and extracting seats. Conversely, the water-making team primarily consisted of individuals who were either physically weak or injured, and thus was tasked with melting snow to produce water. By prioritizing the most urgent tasks, the survivors successfully established a clearly defined system that every individual member could adhere to. Each member was cognizant of their specific responsibilities in preserving the unity of the collective, and everyone diligently worked towards the common goal they all shared:

The truth is that we functioned as an integrated system whose individual parts gave support to each other, with each individual change that could affect the group being compensated for by the rest, as a way of maintaining the whole in an equilibrium. (Strauch & Soriano, 2019, p. 44)

A common denominator throughout the 72 days in the Andes mountains was the active participation of every individual in maintaining the survivors' organizational structure. Without each survivor's contribution to creating and maintaining their emerging structure, the survivors would not have been able to navigate the evolving conditions following the crash:

A group is very similar to the engine of a car. It is made up of several parts; each part has a specific purpose. A part in isolation from the rest of the pieces, even if it works perfectly, cannot make the engine run. Yet, all the pieces working together enable the car to move forward. (Páez Rodríguez & Campodónico, 2019, p. 123)

In adapting to the ever-changing contextual circumstances, however, the emerging organizational structure had to remain fluid. This dynamic is reflected in the interplay between changing contextual demands, the updating of the survivors' sense made, and their subsequent efforts to adapt their emerging organizational structure. For instance, when an avalanche buried the sleeping survivors inside their fuselage, resulting in the loss of several important members, the group was forced to reorganize:

We were now just a bunch of boys with no formal authority. Javier was the oldest but suffered from altitude sickness and was self-absorbed in his own tragedy. He had lost Liliana in the avalanche, he was slow, and he was half-deaf, and blind in one eye. In the new situation we regrouped, and others assumed new roles. The group began to revolve around the three Strauch cousins who, after Javier, where the oldest. (Algorta, 2016, p. 54)

5.3. Communitary processing

5.3.1. Compassionate relating

Upon recognizing the severity of their predicament, the survivors began to use their bodies as sources of warmth for one another. With temperatures plummeting well below freezing, this close physical contact became essential to stave off the lethal cold:

Experiencing the human warmth that saved us from a frozen death, aware of the importance of another's life for one's own survival. (Inciarte, 2020, p. 10)

Huddling together fulfilled another essential role. Confronted by an unprecedented ordeal and deeply affected by the events they had witnessed and endured, the survivors, amidst the presence of the deceased, began to seek solace in each other. The mere touch and warmth of a fellow survivor provided a much-needed sense of comfort and reassurance:

We fell into a deep silence. We huddled together, not just for warmth, but to fight back the terror of the unknown. (Canessa & Vierci, 2017, p. 86)

The survivors were acutely aware of the group's closeness and how their mutual physical presence was instrumental in their continued survival. They understood the pivotal role the group played in countering the overwhelming negative emotions each individual grappled with, and in response, the group operated as a cohesive unit to support each member:

Of course there were moments when we were completely shattered, and I don't think any of us made it through the whole time without experiencing periods when he thought he was losing his sanity. We all occasionally fell into bouts of deep depression, but then the group would notice it and act in support of that person, like a living organism trying to rebuild its own weak cells. (Strauch & Soriano, 2019, p. 44)

Over time, the group which was acting as one became "increasingly more cohesive and organized" (Strauch & Soriano, 2019, p. 43). The mere physical presence of each member of the group acted as a foundation for that close community spirit:

All of them contributed, by their simple presence and the force of their personalities, to the close sense of community and common purpose that gave us some protection from the brutality and ruthlessness that surrounded us. (Parrado & Rause, 2006, p. 87)

The compassion that emerged between the survivors culminated in their reciprocal offering of their own bodies. Upon deciding to consume the remains of the deceased, the survivors forged a pact, further solidifying their already existing bond. They vowed that, should any of them perish in the mountains, the remaining members were permitted to use their bodies for sustenance. This selfless commitment to one another's survival "was an act of love, of giving their life for others" (Algorta, 2016, p. 41):

I witnessed a pact; the most honourable, dignified, and sincere pact that I have ever seen or been part of, where men pledged to offer themselves to each other in the event of their death, so that the others could live. A pact of deep love between men; love more than feeling. Love realized by human behavior; and which expresses all human condition, hence the pride I felt and feel in being a man. (Inciarte, 2020, p. 38)

5.3.2. Respectful interacting

As the survivors endured 72 days in close proximity to each other, conflicts were expected to arise. Especially in the beginning, as the survivors struggled to understand their situation, strong negative emotions could have led to interpersonal tensions. It was easy to look for a

scapegoat, particularly since the trip was primarily the idea of Marcelo Perez, who, as the captain of the rugby team, convinced most of the members to join. Shortly after the crash, once the most urgent needs were addressed, Marcelo spoke up: “It’s my fault,” and further added, “I have killed you all” (Parrado & Rause, 2006, p. 110). What could have escalated into “a dangerous mood. A group in stress looks for a scapegoat” (Read, 1974, p. 126) was soon resolved by the remaining survivors:

We all understood his despondency and had seen this coming. “Don’t think that way, Marcelo,” said Fito. “We all share the same fate here. No one blames you.” “I chartered the plane!” Marcelo snapped. “I hired the pilots! I scheduled the matches and persuaded you all to come.” “You did not persuade my mother and my sister,” I said. “I did that, and now they’re dead. But I cannot take the blame for this. It’s not our fault that a plane falls from the sky.” “Each of us made his own choice,” someone said. “You are a good captain, Marcelo, don’t lose heart.” (Parrado & Rause, 2006, p. 110)

Over time, additional conflicts could have arisen as some survivors have not been contributing to the emerging organization as much as others. Some referred to those who were lethargic as parasites whose sole purpose seemed to be to consume precious resources:

Those of us who were strong enough to work were not always gentle with these boys. With all the pressures we were facing, it was hard at times not to think of them as cowards or parasites. Most of them were not seriously injured, and it angered us that they could not summon the will to join in our common fight to survive. “Move your ass!” we would shout at them. “Do something! You aren’t dead yet!” This emotional rift between the workers and the lost boys created a potential fault line in our small community that could have led to conflict, cruelty and even violence. (Parrado & Rause, 2006, p. 88)

Yet, significant conflicts did not arise among the survivors as everyone recognized that “the human group is always, and in all circumstances, the most valuable resource!” (Inciarte, 2020, p. 36). Accordingly, even though some survivors were annoyed by the lack of contribution from others, they “never despised them or abandoned them to their own fates” (Parrado & Rause, 2006, p. 89). Instead, through ongoing respectful interactions, they took care of those who were unwilling or unable to work, acknowledging their perspective and

understanding how difficult it might be for them to adjust to their newfound reality.

6. Discussion

We used the extreme context of the survivors of the crash of Uruguayan Air Force Flight 571 in the Andes as an illustrative case, making the processes of interest “transparently observable” (Eisenhardt, 1989, p. 537; see Hällgren et al., 2018). Our focus on the lived experience of adversity, rather than structural concerns, led us to examine the survivors’ emergent organization—an organization that shares many characteristics with traditional projects—as a starting point for theorizing about the enacted nature of project resilience. Fig. 3 visualizes the enactment of project resilience as a complex process that depends on *Contextual Processing*, *Community Processing*, and *Emergent Responding*. The project management literature has shown that projects exist under sometimes extremely challenging circumstances, including high levels of complexity, ambiguously defined goals, and exposure to prolonged adversity (De Waard & Kalkman, 2022). In order to navigate and respond to adversity, project members must first create a common understanding of the situational circumstances. In a constructive struggle between sensebreaking and sensemaking through purposeful engagement with adversity and with each other, project members create a collective understanding that enables them to actively respond to and mitigate adversity. The mitigation of adversity is achieved through processes of emergent responding in which project members engage in resourceful adapting and impromptu structuring. As our resulting model suggests, emergent responding is contingent upon project members’ successful processing of contextuality. When project members understand adversity not only as an external force that threatens the viability of the project, but also as an inherent part of the project’s being, they will be able to constructively engage with adversity individually and collectively. Our resulting model also highlights the supportive role of communal processing in dealing with adversity. Adversity creates the potential for negative emotions and interpersonal tensions to arise. The negative consequences of both for the success of project work are well documented in the literature, as negative emotions and interpersonal tensions can inhibit sensemaking processes (Maitlis et al., 2013) and subsequent responses to adversity (Weick, 1993). To mitigate these negative effects, our findings suggest that project members need to

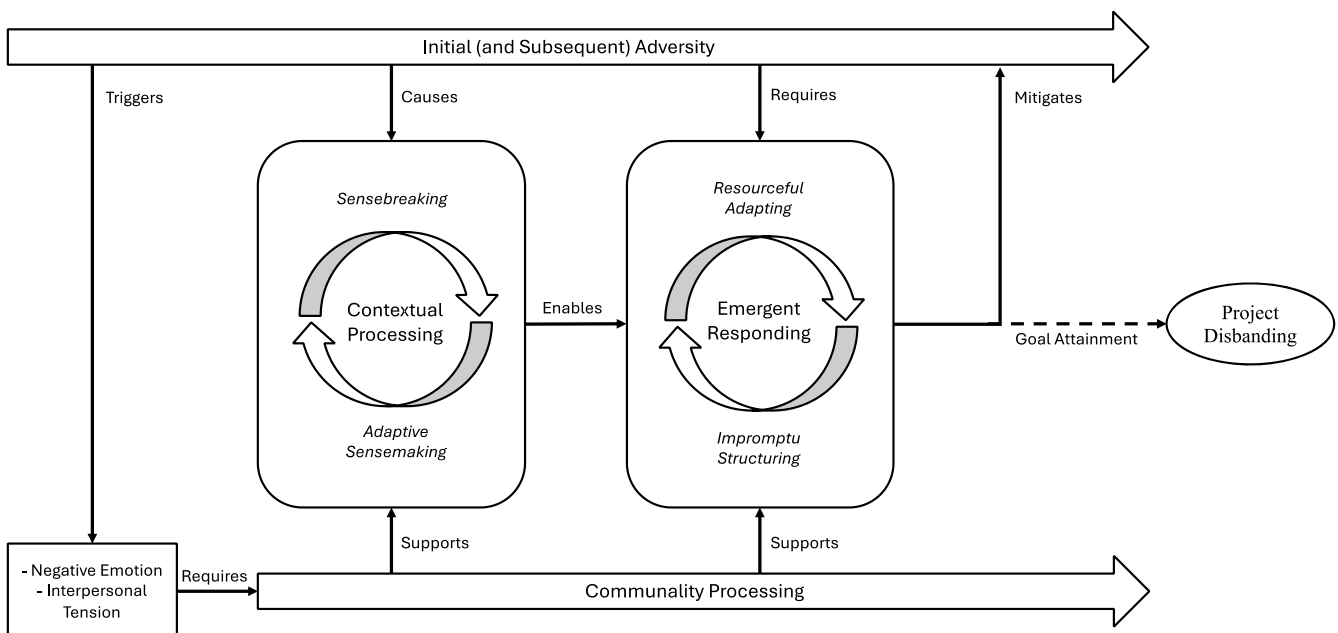


Fig. 3. The enactment of project resilience.

consider problems and their solutions as collectively shared (Lyons et al., 1998). By providing the socio-emotional support necessary for resilience through ongoing communal processing, project members can strengthen both contextual processing of and emergent responding to adversity.

6.1. Enacting adversity through contextual processing

A deeper consideration of project resilience requires an examination of sensemaking processes (Naderpajouh et al., 2023). Given that projects and their members often encounter adverse events (Piperca & Floricel, 2012), the significance of sensemaking in project work is not surprising. The occurrence of adversity requires project members to respond and adapt to new developments that may contradict their previously established expectations (Kutsch et al., 2021). In this sense, project members stabilize their cognitive schemas to respond constructively to adversity (Chaudhry & Amis, 2025). However, depending on the severity of adversity, sensemaking processes may be “disrupted by contradictory evidence” (Giuliani, 2016, p. 221). This contradictory evidence can take the form of emotional (i.e., intense negative emotions), physical (i.e., bodily injury), and cognitive (i.e., derealization and disorientation) disruptions, creating a vacuum of meaning that can potentially spiral out of control (Chaudhry & Amis, 2025). While sensebreaking is primarily a product of severe adversity and the literature discusses its negative ramifications, project members can use it to their advantage. As previously made sense breaks down, the possibility of a new situational understanding unfolds, one that is no longer preoccupied with a particular approach to dealing with adversity. Given the complexity of adversity, a certain preoccupation with how to move forward, especially in projects that are highly permeable to external influences and for which there is an unclear number of solutions, can lead to liabilities such as adhering to a falling course of action. Considering how sensebreaking and sensemaking are typically triggered by the disruption of actors’ expectations (Weick et al., 2005), the way actors interpret these contextual conditions—whether as a threat or an opportunity—shapes the collective response to adversity (Maitlis & Sonenshein, 2010). This relationship between sensebreaking and sensemaking is vividly illustrated by the survivors’ reaction when they learned that the official search for them had been called off. The radio announcement felt like a death sentence, signaling that no help would arrive and that they were left to face the harsh conditions alone. However, some survivors used the grim news to construct another, fundamentally different reality—seeing the end of the search as a chance for them to unite and survive without external aid. In doing so, they revised their understanding of the situation, a process commonly known as updating in the sensemaking literature. Updating involves framing situational, even cosmological, demands as an impetus for action. While effective sensemaking answers the questions, “What’s the story?” and “Now what?” (Weick et al., 2005, p. 413), updating challenges whether the sense made still makes sense (Christianson, 2019). Through this ongoing updating process, actors gain the situational understanding needed to envision a new path forward, shifting from adversity toward the enactment of a desired future (Fernandez et al., 2023). These findings are critical to project resilience research because they highlight how, in the face of unexpected challenges, the way project members interpret and respond to adversity can significantly influence the trajectory of a project. By constructively engaging in both sensebreaking and sensemaking, project members can transform perceived threats into opportunities for collective action, fostering a resilient, proactive approach essential for navigating complex project environments.

6.2. Project resilience as modes of emergent responding to adversity

Structural approaches to project resilience emphasize the critical role that pre-established solutions and routines play in preparing for and responding to adversity (Zhang et al., 2023). The importance of

previously established resources and routines has been widely examined in resilience literature (Williams et al., 2017). Focusing on the project resilience literature, Zhang et al. (2023) demonstrated that during the coping phase of resilience, the existing organizational structure, pre-set resilience plans, and established resources constitute crucial resilience capabilities in projects. However, as noted by Kutsch and Turner (2015), while it may be tempting to rely on premade capabilities and solutions in projects, the uncertainty inherent in adversity “makes such a ‘process’ risky in itself, as novelty and ambiguity require reflection and deliberation” (Kutsch & Turner, 2015, p. 5). Adhering rigidly to pre-designed plans can inhibit adaptive responses, resulting in projects failing to address adversity dynamically and instead resorting to routinized, less effective actions.

Our findings support this argument, indicating that projects need the capacity to switch between two modes of emergent response to adversity. Resourceful adapting, on the one hand, centers on swiftly mitigating process losses caused by adversity. This approach recognizes when a project’s existing robustness is insufficient, requiring more significant, localized adjustments to realign the project with its original objectives. Structured responding, on the other hand, focuses on addressing ambiguity and unexpected developments by reinforcing established relationships and structural principles (see Piperca & Floricel, 2023). These findings are particularly compelling in the context of our case study. The survivors’ emergent organization was defined by surprise and a distinct lack of established routines. However, their flexible adaptation fostered structural integration, allowing them to quickly establish stability while continuously adapting to evolving challenges. This dual capability is essential to understanding project resilience. It suggests that project organizations must balance the stability offered by structured responses with the agility to innovate under pressure. Without this balance, a project’s resilience will be constrained by its inability to adapt dynamically to changing conditions, underscoring the need for a blend of resilience planning and agile, emergent responses to adversity.

6.3. The role of communality for project resilience

The extreme case of the Andean survivors illustrates how adversity induces anxiety, stress, and other negative emotions that can inhibit both personal and collective functioning. Yet, such emotional experiences are not unusual in project management. Research indicates that psychological distress is common in project-based environments due to complex job demands, tight schedules, interpersonal conflicts, and frequent unexpected events (Piperca & Floricel, 2012). This psychological distress is negatively correlated with both individual functioning and overall project success, underscoring the importance of managing these affective experiences (Mubarak et al., 2022). While existing literature often focuses on individual responses to psychological distress—especially in response to project setbacks (e.g., Shepherd et al., 2011)—the role of collective emotion management in the face of adversity is comparatively underexplored. Specifically, within the project resilience literature, researchers have yet to fully examine the emotional dynamics involved in experiencing and responding to adversity (see Kutsch & Hall, 2020, for a notable exception). Our study addresses this gap by demonstrating that the emotional experience of adversity affects not only individuals but also the entire collective. It is thus the task of the collective to address and manage adversity-induced emotions. Through communal processing, relationship partners appraise stressors as shared challenges, assuming joint responsibility for devising and implementing coping strategies (Afifi et al., 2006). Our findings indicate that project resilience is not only enacted through the mitigation and management of external adversity but also involves socio-emotional processes through which project members build and experience strong interpersonal relationships that support collective sensemaking and subsequent emergent responses to adversity. Given that project work often involves shifting membership and relatively

weak interpersonal bonds, it might be expected that managing adversity-related emotions would fall to project managers (see [Sonenshein & Nault, 2024](#)). Instead, our findings reveal that ongoing communal processing is a key driver for resiliently responding to adversity. All project members—not just managers—need to recognize that adversity is a common experience, shared and especially managed by all.

6.4. Methodological implications

In addition to our theoretical contributions, our study provides insights into using (factual) written narratives (i.e., novels, biographies) as a data source inside and outside of project research. In doing so, this study offers three insights. First, as our study illustrates, historical narratives can yield valuable insights into individuals' lived experiences. Against this backdrop, a variety of written accounts have emerged related to project-based settings such as mountaineering, military, and polar expeditions. However, written narratives offer potential not only for researchers interested in the study of projects. Existing work has shown, for example, how historical and fictional accounts of the plague serve as a means of improving our understanding of and adaptation to future disruptions in a post-COVID-19 world ([Roulet & Bothello, 2023](#)). In addition, existing work demonstrates the utility of using written narratives as a data source outside of extreme context research. [Culié et al. \(2022\)](#), for example, used eight novels by Michel Houellebecq, described as an observer of contemporary workers, to study boredom at work.

Irrespective of whether the research is based on factual or fictional work, these written accounts often include perspectives from multiple participants, each documenting their individual experiences of the same event. For qualitative researchers, this offers the opportunities to create in-depth insight into collective phenomena via cross-account analysis ([Hällgren, 2010](#)). Second, we demonstrate how less conventional historical narratives, like those of the Andean survivors, can inform broader project management studies. Such biographies enable researchers to move beyond traditional project management contexts to examine (extreme) cases that, while unconventional, share common characteristics with traditional projects. These narratives thus support extrapolation to more standard project environments. Additionally, as demonstrated by the limited sample of only three articles on disruptive contexts in [De Waard and Kalkman's \(2022\)](#) literature review, there is a pressing need for more knowledge on project management under disruptive conditions. Non-traditional methods and extreme cases can help fill this gap, enhancing our understanding of project organizing in response to disruptive events and contexts. Finally, our approach to analyzing these biographies offers methodological insights for other researchers working with similar data sources. While we do not claim our approach as a best practice, it offers a foundation for further refinement and thus serves as a guide for researchers conducting qualitative analyses of historical narratives across various fields.

6.5. Managerial implications

Given the extraordinary nature of the survivors' ordeal, the question arises regarding the implications that can be drawn from the analysis of such an extreme case for those responsible for project resilience, if any. Yet, scholars have notably underscored that researchers and practitioners can draw valuable insights from the study of cases that are inherently extreme or unconventional ([Bamberger & Pratt, 2010](#)). Based on our study of a rather unconventional project organization, our research brings to light some of the typically concealed resilient processes and, consequently, offers implications for project members on how to enact resilience in the face of adversity. Compared to the extreme case of the survivors, members of most project organizations will not experience mortal threats to their own lives. However, the flexibility shown by the survivors' in dealing with and adapting to the

ever-changing conditions of their predicament provides some implications for those working in more traditional projects. Against this backdrop, especially those projects that can be considered *hard* ([Crawford & Pollack, 2004](#)) can benefit from incorporating more softer aspects into their daily project work. One of the main implications of our work is that project resilience is very much a social process. Accordingly, the strict adherence to predetermined plans can potentially limit a projects' resilience. Therefore, project managers and members alike should be aware of the need to reinterpret situations and adapt strategies based on evolving conditions. Instead of a rather rigid adherence to initial plans, the evolving nature of adversity and the survivors' respective coping efforts show how continuous adaptation is a necessary condition for project resilience. In addition, and in line with recent research on project success factors (e.g., [Imam & Zaheer, 2021](#)), our study highlights how a human-centered approach contributes to fostering resilience within projects. The experiences of the survivors reflect how emotion management and interpersonal dynamics play a key role in project resilience. As projects of all types will experience adversities of varying severity that can potentially lead to detrimental emotional experiences, project managers should focus on social processes that promote emotional intelligence and conflict resolution among team members. In doing so, they can foster a cohesive culture among project members that limits interpersonal tensions and creates an environment that enhances individual and collective performance.

6.6. Limitations

The analysis of extreme contexts can illuminate elusive organizational phenomena, making them more transparent and observable, thereby enhancing our understanding of project resilience in more conventional settings ([Eisenhardt, 1989](#); [Hällgren et al., 2018](#)). However, the qualitative analysis of such cases, particularly when using written biographical narratives, introduces certain limitations. While this study examines the survivors' fight for life through the lens of project resilience, we acknowledge the limitation of equating their emergent organization with the conventional case of a project organization. Typically, projects are characterized by planned structures, predefined goals, and established roles, which contrast with the highly improvisational and reactive organization of the survivors. However, the soft and emergent nature of their structure enabled us to reflect more deeply on the inherently social aspects of resilience. The survivors' organization was fundamentally built on interpersonal dynamics, shared emotional processes, and mutual reliance; allowing them to navigate extreme adversity collectively. Although the direct applicability of our findings to conventional project organizations is somewhat limited due to the extreme nature of our case, we argue that it is the exceptional nature of our case in particular that allows us to focus specifically on the soft aspects of project organizing, thereby offering an opportunity to explore project resilience in its rawest and most socially enacted form.

Additionally, some historical accounts used in our research were not solely authored by the survivors but co-written with historians (e.g., [Read, 1974](#)). Also, the biographies were not written immediately after the events. This delay may have led to the alteration, omission, or suppression of details regarding the survivors' experiences. Furthermore, given the commercial intent behind the biographies, it is possible that some factual details were modified for dramatic effect ([Simpson, 2008](#)) or to present a more socially desirable image of the survivors ([Donaldson & Grant-Vallone, 2002](#)). To address this, we employed a cross-account analysis of the events, comparing descriptions and interpretations from multiple sources, which helps mitigate biases inherent to this method ([Hällgren, 2010](#)).

7. Concluding remarks

Our study highlights the situational enactment of resilience within project organizations, using the 1972 Andes plane crash as an

illustrative case that focuses on the in-situ actions of project members in responding to adversity. Our findings show that project resilience emerges from the convergence of spontaneous, situational responses and organized actions, which together enable project members to navigate the ambiguous and emotionally challenging demands of adversity. By viewing project resilience as a socially and situationally enacted process, we reveal how resilience is created and maintained in real-time as project members collectively respond to and mitigate adversity in their efforts to recover and persevere.

CRedit authorship contribution statement

Kijan Vakilizadeh: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Sebastian Raetzke:** Writing – review & editing, Conceptualization.

Declaration of competing interests

The authors declare that they have no conflict of interest.

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