

ORIGINAL ARTICLE

Navigating team resilience: A video observation of an elite yacht racing crew

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Abstract

In this paper, we take a process perspective to inductively theorize how shifting sources of adversity and subjective experiences of team relationship quality influence team resilience across time. Building on the literature, we characterize team resilience as a set of team-level processes—*anticipation*, *coping*, and *learning*—which can support teams to work interdependently to return to, or beyond, pre-adversity levels of performance. Despite the rising interest, existing research has tended to be theoretical or exploratory in relation to sources of everyday team adversity. To further understand team resilience, we examine how the characteristics of team resilience unfold across time between a crew of sailors during a challenging multi-day yacht race and competitive demands. Using video observations and interview data, we explore in real-time how team resilience processes are (i) shaped by dynamism in the sources of external (environmental) adversity and internal team adversity encountered and (ii) influenced by shifts in the subjective experience of team relationship quality across time. We make two contributions: a novel conceptualization of how

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external (environmental) adversity and internal team adversity affect team resilience processes across time and a theorization of how relationship quality affects team resilience in the context of shifting adversities.

KEYWORDS

adversity, Australia, relationship quality, social psychology, team resilience, yacht racing

INTRODUCTION

Recent events such as the COVID-19 pandemic (Degbey & Einola, 2020; Thielsch et al., 2021) and the conflict in Ukraine (Cumming, 2022) have tested teams in the workplace in unprecedented ways (Kuntz, 2021). Despite growing interest in resilience as a field of study, limited attention has been paid to resilience as a team-level phenomenon. Understanding team resilience is important because teams—groups of individuals with shared goals (Devine, 2002)—are frequently the basic units through which tasks are performed and by which actions are accomplished in organizations (Degbey & Einola, 2020). Teams frequently encounter external adversities which occur outside of the team's system, triggering unexpected adverse events and frequently requiring immediate actions from the team (van der Vegt et al., 2015). Considering the persistent levels of external adversity experienced in the contemporary world (Bennett & Lemoine, 2014; Wenzel et al., 2020), it is perhaps unsurprising that resilience (the process of managing adversity) has become an increasingly salient area in social psychology. Although some adversities that affect teams originate extra-organizationally, others derive from day-to-day within-team processes (internal team adversity) and activities. Stoverink et al. (2020, p. 395) argue that team adversity can be understood as a combination of “chronic stressors” (e.g., “role overload”) and “acute shocks” (e.g., equipment failures, disruption to team composition, and “heated argument among teammates”). Teams often need the capacity to manage both external and internal team adversity simultaneously, suggesting a need for team resilience research to encompass both sources of stressors, which are frequently interrelated.

Although resilience is recognized as a complex, multi-faceted and multi-dimensional concept (Ponomarov & Holcomb, 2009), the term is commonly concerned with the characteristics that enable resilient employees, teams, and organizations to navigate adversity more effectively than their less resilient counterparts (Linnenluecke, 2017). Resilience can therefore be understood as both an ability (*being resilient*) and as an outcome that becomes observable once an adverse event has been experienced (*demonstrating resilience*) (Stoverink et al., 2020, p. 398; see also, Britt et al., 2016). Considering this tension, Duchek (2020, pp. 216–217) conceptualizes resilience as a meta-capability that involves both “defensive responses” (*coping*) and “offensive responses” (*anticipation and adaptation*) to adversity. Our conceptualization of team resilience builds on this view and focuses on the “processes that reflect the capacity for resilience” rather than on the demonstration of resilience (Britt et al., 2016, p. 381).

Research on team resilience is distinguished from resilience at other levels of analysis by attention to factors such as high task interdependence (Stoverink et al., 2020), relational dynamics, and interpersonal social and emotional processes (Stephens et al., 2013). These elements are reflected in Stoverink et al.'s (2020) definition of team resilience as “a team's capacity to bounce

back from adversity-induced process loss” (p. 398) by “working interdependently to return to their pre-adversity performance level” (p. 399). Our conceptualization of team resilience processes integrates insights from Stoverink et al. (2020) and Duchek (2020) and builds upon their previous work. We therefore characterize team resilience as a set of team-level processes—*anticipation, coping, and learning*—which under certain conditions can support teams to work interdependently to return to, or beyond, pre-adversity levels of performance.

Despite the significance of team resilience, there remain significant theoretical and empirical gaps in our understanding of the concept (Hartmann, Weiss, & Hoegl, 2020). At the theoretical level, more context-specific and processual conceptualizations of the concept are required (Britt et al., 2016) to delineate team resilience from closely adjacent concepts, such as post-traumatic growth (see Bonanno et al., 2011) and team adaptability and effectiveness (Stoverink et al., 2020). Our improved understanding of team resilience in practice has also been hindered because research in this area has tended to be conceptual in nature (Stoverink et al., 2020), to explore the effects of teams on organizational resilience (Bui et al., 2019), or investigate everyday team resilience, termed “inherent resilience” by Kuntz et al. (2016, p. 458) in workplace settings (for example, see Degbey & Einola, 2020, on virtual teams). Less is known about how resilience processes unfold in the contexts of external adversity (Cannon-Bowers & Salas, 1998) and/or within-team adversity (Stoverink et al., 2020). These gaps are significant because without the resilience capacity to manage external and internal sources of adversity, teams may experience burnout and stress, underperform, or even fail to perform in context (Carmeli & Russo, 2016; Malinen et al., 2019; Stephens et al., 2013). We therefore aim to explore how team resilience processes are shaped by dynamism in the sources of external (environmental) adversity and internal team adversity encountered across time.

Processual insights regarding how relationship quality (Carmeli et al., 2009; Dutton & Heaphy, 2003) influences team resilience remain surprisingly scant. Exceptions include Stephens et al. (2013) research that highlights how emotional carrying capacity—the capacity of the team to express positive and negative emotions constructively—and relationship quality more broadly contributes to team resilience. Carmeli et al. (2009) and Carmeli et al. (2013), building upon the work of Dutton and Heaphy (2003), emphasize how relationship connectivity contributes to top management team resilience by, for example, allowing teams to remain open to new ideas and to deflect close-minded behaviors. Brueller et al. (2019) likewise draw on Dutton and Heaphy’s (2003) work on relationship quality to highlight the importance of relational tensility—the capacity of team connections to bend and withstand strain despite adversity in the context of inter-organizational resilience. However, to date, limited research and theorization exist about team resilience and relationship quality in the context of teams that experience relatively high levels of external and internal adversity.

Considering the gaps in the extant literature, we aim to explore how team resilience processes are influenced by shifts in the types of adversity encountered, as well as the subjective experience of team relationship quality across time. We ask the following questions: To what extent and how does external (environmental) team adversity affect internal team adversity (and vice versa) across time? How are team resilience processes influenced by shifts in the subjective experience of team relationship quality across time?

To address our research questions, we draw on a unique video observation technique developed for this study to explore how team resilience processes unfold across time in the context of an international yacht racing team. The study focuses on this racing team because features inherent in competitive sailing—such as volatile weather, uncertain tidal systems, and complex equipment—create ideal conditions to observe a team operating in the context of both external

and internal team adversity. The studied team is an excellent example of a “high skilled specialist team operating in brief performance events that require improvisation in unpredictable circumstances” (Sundstrom et al., 1990, p. 121). Data were captured by placing digital recording devices on the top of the boat and below deck in the galley (where decisions are often discussed and taken). Data collection resulted in approximately 72 h of video and audio footage. We also collected supplementary data through short-form interviews. From this data, we explored how the characteristics of team resilience unfold, in real time, between a crew of 11 sailors during a multi-day international-level yacht race that occurs annually in Australia. By using this combination of video observation and interviews, we were able to examine the complex interrelationships between the type of adversity, team relationship quality, and team resilience processes across a multi-day event (Fisher et al., 2019).

The study and analysis of findings make two key contributions. We develop a novel conceptualization of the relationship between external team adversity and internal team adversity and its effect on team resilience over time. We then provide theorization of how relationship quality affects team resilience in the context of shifting adversities.

We begin by reviewing the literature on team adversity, team resilience, and team relationship quality before presenting the methods and findings of our study. We close with a discussion of the implications for team resilience, highlighting the role of both external and internal team adversity in shaping interpersonal dynamics, teamwork, and team outcomes.

TEAM RELATIONSHIP QUALITY IN TEAM RESILIENCE

In this section, we outline how the prior literature informs the present study. A growing body of research examines resilience among teams (e.g., Chapman et al., 2021; Gucciardi et al., 2018; Hartmann, Weiss, Newman, & Hoegl, 2020; Raetze, 2020), in recognition of the crucial importance of teams to the achievement of most organizational objectives (Humphrey & Aime, 2014). Compared to individual resilience research, team resilience research is at an earlier stage of development, with considerable attention given in recent research to conceptualizing team resilience and theorizing its processes and antecedents (Hartmann, Weiss, & Hoegl, 2020; Raetze, 2020; Raetze et al., 2022). Although the nature of team resilience remains contested (Hartmann, Weiss, Newman, & Hoegl, 2020; Raetze, 2020), an important strand in the literature characterizes team resilience as involving a set of processes that emerge over time within teams facing adversities, which reflects inputs and capabilities at multiple levels of analysis in interaction with the team’s environment (Gucciardi et al., 2018; Raetze, 2020; Raetze et al., 2022; Stoverink et al., 2020).

The key factor distinguishing team resilience from resilience at other levels of analysis (individual and organizational) is the elevated levels of interdependence and the frequency of inter-related tasks experienced between team members. In part, this is because resilient teams regularly need to integrate across divergent views and to engage in “coordination, collaboration, or compromise” (Stoverink et al., 2020, p. 399). Conceptually, team resilience is also distinct from adjacent concepts. For example, Stoverink et al. (2020, p. 403) distinguish between team adaptability, persistence, and resilience, suggesting that they are “distinct” concepts in which “team adaptability contributes to resilience by giving a team one strategy for overcoming adversity.” Persistence is when the team continues with existing processes regardless of the challenge presented at the moment. Such persistence is akin to a predictable performance demand which may put a team or mini-team into a state of flow (Csikszentmihalyi et al., 2021; Nakamura & Csikszentmihalyi, 2002) which, in turn, supports resilience.

Empirical team resilience research has examined how teams and their members experience resilience and seek to build team resilience in a range of contexts, including military training (Chapman et al., 2021), sports teams (Decroos et al., 2017; Morgan et al., 2017), top management teams (Carmeli et al., 2013), virtual teams (Degbey & Einola, 2020), and project teams (Amaral et al., 2015). The relatively limited amount of empirical research on team resilience is striking (see Chapman et al., 2021), as is the emphasis within prior empirical work on developing inventories to measure team resilience attributes and contributors (e.g., Decroos et al., 2017). It is accepted that adversity of some form is necessary for the experience and observation of resilience (Alliger et al., 2015), and that adversities of various kinds are becoming increasingly widely experienced in organizational life (Bonanno, 2004; Chapman et al., 2021).

Taking these observations as our point of departure, we explore how teams navigate adversities of two kinds—external (environmental) adversity and internal team adversity—paying particular attention to how team relational quality intervenes in a team’s resilience processes. We visualize the study’s conceptual framework in relation to our research questions in Figure 1.

In the following sub-sections, we situate this study within the extant literatures on team adversity, team resilience, and team relationship quality.

External and internal team adversity

Teams need to make decisions despite imperfect and incomplete information, operate in contexts that change rapidly, undergo reconfigurations to team composition, and experience disruptions (Stoverink et al., 2020). Yet, although all teams address issues, problems, and challenges, only some of these phenomena experienced are technically characterized as adversity. Fikretoglu and McCreary (2012) propose that understanding what constitutes adversity involves determining whether the adversity is acute or chronic, objective or subjective, or

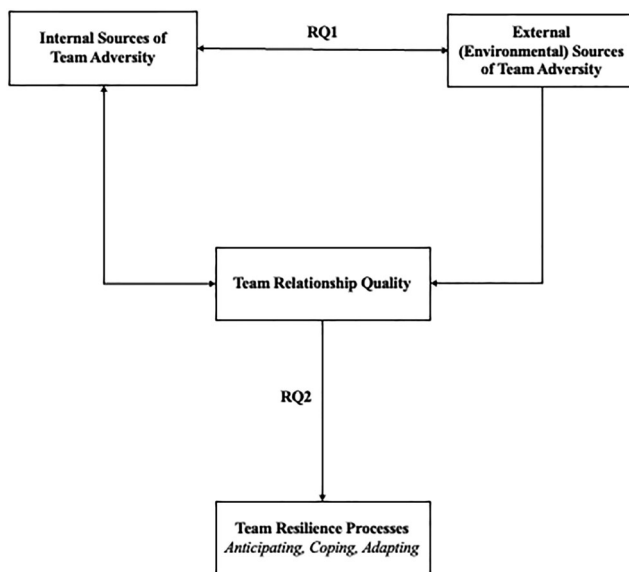


FIGURE 1 Boundaries of the study.

uneven combinations of both. For, Britt et al. (2016), the key dimensions of adversity include the following: intensity, frequency, duration, and predictability. These generic categories highlight important variations in the type and consequentiality of adversity that may be experienced by a team. Prior research has highlighted the importance of the resilience of variations in the severity of adversity faced, its temporality (whether acute, chronic, how frequently encountered, etc.), the intensity of its effects, and its origin (especially whether adversity originates within, or outside, the system or unit of observation) (Kuntz et al., 2016; Olekalns et al., 2020). Adverse events can therefore cause disruption to team functioning (Cronin & Bezrukova, 2019; Wright et al., 2013).

Stoverink et al.'s (2020) conceptualization of adversity in the context of team resilience builds on the work of Morgeson et al. (2015). Drawing from systems theory (Berrien, 1961; von Bertalanffy, 1950). Morgeson et al. (2015) argue that understanding adverse events requires sensitization toward (1) event strength as concerning the level of novelty, disruption, and criticality; (2) event space as relating to where an event originates from and how its effects spread; and (3) event time as capturing when an event occurs and how long it remains impactful. Thus, in considering the impact of adverse events upon teams it is useful to notice levels of *novelty* (different from the past, new, and unexpected), *disruption* (amount or degree of discontinuity or change), and *criticality* (important, essential, or a priority requiring greater and unusual attention and action).

The types of adversities that a team encounters are therefore likely to be heterogeneous. Of particular importance here is the origin of adversity, especially whether adversity originates within the team or comes from the team's environment (Hartmann, Weiss & Hoegl, 2020; Kuntz et al., 2016; Olekalns et al., 2020). Teams are affected by external (or environmental) adversity when factors outside of the team (e.g., weather systems and terrorist threats) cause unexpected events that require rapid action (van der Vegt et al., 2015). In contrast, internal team adversity emerges from the team operating in their internal environment. Stoverink et al. (2020, p. 395) distinguish that internal team adversity can take the form of "chronic" issues that persist across time (e.g., specific roles becoming overloaded with work) or "acute" events that may emerge unexpectedly (e.g., equipment failures, permanent or temporary unavailability of a key team member, or sudden interpersonal conflict). Stoverink et al. (2020) also note that individual team members can be a source of adversity for the team (e.g., social loafing, a lack of reflexivity about work overload, and antagonism) that can adversely impact team dynamics. Teams therefore need to develop and sustain the capacity to manage both external (environmental) adversity (Hällgren et al., 2018; van der Vegt et al., 2015) and internal team adversity (Stoverink et al., 2020). Because positive interpersonal dynamics are crucial to team level performance (Beauregard, 2010; Liu & Boyatzis, 2021; Shefer et al., 2018), these dynamics suggest (i) that internal team adversity is likely intensified by external (environmental) adversity and (ii) that internal team adversity might distract a team from anticipating or responding to external (environmental) adversity.

These observations from prior research suggest that how a team handles both external and internal adversities might be influenced by team relationship quality.

Team relationship quality

It is well established that positive interpersonal dynamics are crucial to team performance (Fredrickson, 2013; Liu & Boyatzis, 2021). Teams, like the individuals that form them, the

organizations of which they are a part, and the environments in which they are situated are complex adaptive systems (Stacey, 2011). In exploring the importance of team resilience in handling the challenges of such systems, team relationship quality is, arguably, significant (see Dutton & Heaphy, 2003) because the quality of these relationships interacts with the processes of resilience to influence outcomes. For example, research suggests that “relationship strength” (i.e., friendship and voluntary interdependence across time) (Carmeli et al., 2009; Dutton & Heaphy, 2003; Stephens et al., 2013) as an element of team relationship quality might support resilience across levels of analysis.

Research to date has identified several aspects of relationship quality that appear to support resilience. Marotto et al.’s (2007) focus on how the ability of individuals to subjugate themselves to a higher level of purpose in the context of adversity can contribute to resilient team performance. Brueller et al. (2019) explore the relational underpinnings of interorganizational resilience and the tensility of relationships (relational tensility). Relational tensility involves the ability of strong relationships to endure under pressure despite the strains placed upon them by adversities across time. Stephens et al. (2013) contribute to the analysis of such relationships and processes by applying the concept of emotional carrying capacity within teams to explain the role of the constructive expression of emotions in relational connection quality. In the face of adversity, they note, teams that can constructively express both positive and negative emotions and maintain relational connections despite strain are more likely to ease collectively felt stressors (Knight et al., 2018) and sustain team cohesion (Alliger et al., 2015), characterized here by a sense of team belonging, unity, and harmony (Razinskas, 2021). Building on the work of Dutton and Heaphy (2003), Carmeli et al. (2013) explore how relational connectivity—the openness of the tie between team members to consider new ideas and to deflect behaviors that would close down openness, generativity, and creativity—in the context of top management team resilience.

Despite some recent attention in the resilience literature, relationship quality continues to play a surprisingly limited role in conceptualizations of team resilience. For example, the influential conceptual model of work team resilience put forward by Stoverink et al. (2020) conceptualizes interpersonal processes primarily as a source of social support or conflict management rather than in relation to the numerous roles and effects played by relationship quality. Additionally, little is known about the importance of high-quality relationships when teams experience different types of adversity across time.

We summarize the key concepts that we use to situate this study within the extant literature in Table 1.

RESEARCH SITE AND METHODS

Data were principally collected through video observation of the team and their interactions during a 72-h yacht race (Morgan et al., 2013). Video observation (composed of visual and audible data) draws attention to the embodied nature of experience, highlighting how internal and external sources of adversity were experienced and responded to in real time by the observed team, here referred to as a crew. We adopted a qualitative approach because it enabled us to examine the types of adversity experienced by the crew during the race, the unfolding quality of relationships, and the processes that enabled team resilience (Britt et al., 2016; Duchek, 2020; Stoverink et al., 2020). We proceed, therefore, from an interpretivist paradigm whereby we understand that the world is multi-layered and complex and that a single phenomenon can have multiple interpretations (Bell et al., 2022). A process perspective emphasizes the centrality of time and timing to teams and their resilience (Langley et al., 2013). Process research

TABLE 1 Key concepts from the extant literature.

Key concepts	Definition	Source
External (environmental) adversity	“These adverse events are caused by factors outside the system, are unexpected, and require immediate action”	Van der Vegt et al. (2015, p. 972)
Internal team adversity	“Chronic (i.e., long-standing, cumulative) stressors, such as role overload, collective fatigue ...” “Acute (i.e., sudden, often high intensity) shocks, such as team equipment or technology failure, a heated argument among teammates ...”	Stoverink et al., 2020, p. 395)
Organizational resilience characteristics	“Inherent characteristics of those organizations that are able to respond more quickly, recover faster or develop more unusual ways of doing business under duress than others”	Linnenluecke (2017, p. 4) Duchek (2020, p. 220)
Anticipating, coping, and adapting	“An organization’s ability to anticipate potential threats, to cope effectively with adverse events, and to adapt to changing conditions”	
Team resilience	“A team’s capacity to bounce back from adversity-induced process loss”	Stoverink et al. (2020, p. 398)
Bouncing back	“Members work interdependently to return to their pre-adversity performance level, or beyond”	Stoverink et al. (2020, p. 399)
Team relationship quality	<i>Relational tensility</i> . “The capacity of the connection to bend and withstand strain and to function in a variety of circumstances” <i>Emotional carrying capacity</i> . “One aspect of connection quality, and refers to the relationship’s capacity to express more emotion overall, both positive and negative emotions, and to do so in a constructive manner” <i>Connectivity</i> . Openness of the tie between team members to considering new ideas, combined with the ability to deflect behaviors that would closedown openness, generativity, and creativity.	Dutton and Heaphy (2003, p. 266) in Brueller et al. (2019, p. 6) Dutton and Heaphy (2003) from Stephens et al. (2013, p. 15) Dutton and Heaphy (2003) and Carmeli et al. (2009)

questions immerse researchers in a “conceptual terrain of events, episodes, activity, temporal ordering, fluidity and change” (Langley et al., 2013, p. 10). Video observation is well suited to collecting process data because it allows for the examination of adversities, relationships, and actions across time (Langley, 1999). The ontology taken originates from an understanding of the world, which is viewed as made up of processes, actions, and interactions rather than objects or things. From this perspective, entities (such as a team) are “temporary instantiations of ongoing processes’ (Langley et al., 2013, p. 5) continually in a state of becoming (Tsoukas & Chia, 2002).

Research site

This empirical study involves a yacht racing crew who participate in elite multi-day ocean races in the Asia-Pacific region. We focus on a yacht racing crew because of the numerous and varied

adversities such teams face (Cannon-Bowers & Salas, 1998), and the unique opportunity to observe the relational underpinnings (Brueller et al., 2019) of team resilience as it unfolds in the field in real time. In addition to operating in a risky context, which provokes concern for crew safety (Hällgren et al., 2018), elite yacht racing is often characterized by the need for high levels of financial investment and intense competition. Privately owned, the 12-m-long (Australian) yacht operates with 11 crew members (aged between 25 and 65 years) to compete in high-profile yacht races that attract media coverage and provide opportunities for the promotion of sponsor brands. The leadership team on board is called the “afterguard.” No one outside of the afterguard gives commands on the yacht. The afterguard is made up of skipper (captain), navigator (strategist), and watch captain. The watch captain role comes into play in the multi-day event observed because he is in charge when the others in the leadership team are asleep/at rest. The navigator is one of the most experienced and high-achieving navigators in Australia having won multiple elite races over the last three decades. The other team members each have a clearly designated role for which they are trained and experienced (e.g., trimmer, a role involved in maneuvering the sail sheet). Only one member was paid, as he is a professional sailor. Most of the crew have trained and competed together at an elite level over several years, typically involving one to two weekly training sessions in the 4- to 6-week period prior to a major race and three to four races per year. The composition of the sample is summarized in Table 2.

All members of the yacht crew consented to video and audio recording during the race and to being interviewed. However, to protect the anonymity of individual team members, we do not provide photographic stills or video footage that could reveal how individuals responded to specific adverse events.

Data collection

Capturing video footage during a yacht race is not a standard procedure. Some sailing enthusiasts use GoPro cameras to stream or capture film for personal reasons, but film is not frequently used for research purposes. The yacht was furnished with two cameras, one attached to the starboard aft rail on deck (where the sailing is done) and one attached to the portside rail of the cabin below (where plans are made). No cameras were attached to either people or personal areas of the yacht (e.g., heads) for reasons of privacy. For the below deck activity, cameras captured video and audio data. For the on-deck activity, much of the audio is unclear so this footage was used primarily at the visual level. Nord and Fox (1999, p.164) note that “research will be most valuable if it is reported in ways that permit readers to locate the research in the full context in which it is collected.” The captured footage shows how the team responded to the tasks, challenges, and adversities they faced during the race. We implicitly foreground the “relativity of embodied behaviors and especially spatial manoeuvres” (LeBaron et al., 2018, p. 246) in our study. For example, the footage allows us to identify facial expressions and gestures and to observe how team members relate to one another across time. Video observation allowed us to view participants in their natural settings, reduce observer bias, and access a hard-to-reach context (Smets et al., 2014). These advantages are particularly important for studies involving a dangerous context like competitive yacht racing.

Video observation was also supplemented with pre-race and post-race semi-structured interviews that took place with all team members ($n = 11$). Short interviews (approximately 10 min) were conducted both pre-race and post-race by the research assistant and longer post-race

TABLE 2 Sample composition.

Participant code	Age	Gender	Occupation	Years of sailing	Months sailing with the crew	Primary role	Secondary role
P1	65	M	Retired	32	48	Owner, helm, strategist	Leadership
P2	62	M	Small business owner	55	48	Owner, navigator	Leadership
P3	61	M	Small business owner	54	48	Helm	Leadership
P4	59	M	Small business owner	38	48	Helm, mainsheet trimmer	Leadership
P5	57	M	Shipwright	28	48	Trimmer	Mid-deck
P6	33	M	Builder	17	48	Trimmer	Mid-deck
P7	53	M	Manager	28	36	Trimmer	Mid-deck
P8	25	M	Student	15	36	Trimmer	Mid-deck
P9	26	M	Sailmaker	17	36	Bow	Foredeck/Bow
P10	51	M	Manager	9	36	Bow	Foredeck/Bow
P11	51	F	Small business owner	4	48	Logistics	Meal preparation

interviews (approximately 45 min) were conducted by the lead author. Pre-race interviews were conducted immediately before the race and sought to understand how the team was planning to mitigate the adversities that might emerge during the race and to get a sense of pre-race team relationship quality. Post-race interviews focused on understanding how the team responded to the adversities they encountered during the race (resilience processes) and the influences such adversities had on the relationships between team members. Interviews were therefore a useful supplement to and integrated with the audio-visual evidence collected because they allowed us to explore participants' accounts and reflections about what was happening throughout the race and to use these accounts as a counterpoint to our own observations and interpretations during data analysis.

Data analysis

The aim of our data analysis was to provide “temporal progressions of activities as elements of explanation and understanding” (Langley et al., 2013, p. 1). We therefore began by individually watching (and re-watching) the video footage to identify the key discontinuities and events that unfolded across the race. In a pre-coding stage, we used a qualitative memo technique (Miles et al., 2020) to capture rough thoughts about what was puzzling or surprising in the video footage. The memos were then circulated between research team members and discussed in a series of data analysis meetings.

In a temporal bracketing stage, we drew upon Langley's (1999) approach to strategies for theorizing from process data (see also Langley et al., 2013; Lerman et al., 2022). Because this approach looks at how events, activities, and decisions are structured across time, it is a good fit for looking at the relationships between adversity type, team relationship quality, and team resilience processes. In this approach, you undertake a comparative analysis of the phases in your data to identify “temporal brackets.” Temporal brackets do not necessarily have any “particular theoretical significance” (Langley, 1999, p. 703) but rather emerge because there “are certain discontinuities at the frontiers” of the data (Langley, 1999, p. 703; see also Langley & Truax, 1994). As such, through multiple viewings of the video data, we were able to identify several segments of the footage, or temporal brackets, that appeared to show a significant transition or discontinuity in relation to what the team was experiencing. For example, we noted when the team moved suddenly from inaction to action and from routine/no dialog to more heated dialog. Eventually, these two transitions in the video data became temporal brackets relating to the “calm in the chaos” and the “chaos in the calm” respectively. Our data therefore consist “largely of stories about what happened and who did what and when—that is, events, activities, and choices ordered over time” (Langley, 1999, p. 692). Similar multimodal data analytic approaches have been used in studies of military teams operating in the context of adversities (see Fraher et al., 2017) and in studies of leadership in extreme contexts (Buchanan & Hällgren, 2019). We took this approach because splitting the video footage “... into successive adjacent periods enables the explicit examination of how actions of one period led to changes in the context that will affect action in subsequent periods” (Langley, 1999: p. 703).

Subsequently, we created an Excel spreadsheet organized by temporal brackets, which combined both the visual (team movement and activities on the yacht) and audible data (dialog, monolog, vocalizations, and background noise) from the video footage with relevant interview extracts. This step allowed us to bring together the multimodal aspects of the video observation data with excerpts of the interview data, which enabled both (a) a form of triangulation between data collection methods and (b) a basis for writing the vignettes that are included in

our findings section. The authors had a series of meetings to discuss the emerging themes and to begin to relate them to our research questions. Finally, in a process theorizing stage, we restarted the memo procedure to capture and discuss thoughts about the ways in which our temporal brackets, as well as the data within them, might be inductively interpreted. In line with our understanding of reality as multi-layered, subjective, and complex (Chapman et al., 2021), we finally reached an agreement about how our temporal bracketed data could be interpreted theoretically as presented in the findings section below.

FINDINGS

In this section, we explore our findings in relation to our research questions: To what extent and how does external (environmental) adversity affect internal team adversity (and vice versa) across time? How are team resilience processes influenced by shifts in the subjective experience of team relationship quality across time? In doing so, we identified five temporal brackets relating to the role of external and internal team adversity in influencing team resilience capacities. In these brackets, we juxtapose the extent to which the team experienced high or low external (environmental) adversity and/or internal team adversity. We then identified two key themes relating to the influence of team relationship quality on the interplay between adversity type and the processes underpinning team resilience. Indicative video excerpts from the race are available throughout this section by clicking on the titled hyperlink.

Team and external team adversity

Calm in the chaos

In the first temporal bracket, we observe low internal team adversity and high external adversity. We characterize this as the *calm in the chaos* because the markers of team adversity (e.g., interpersonal friction and tension) are absent, whereas some signs of external adversity are apparent. For example, at the start of this race, there is the very real possibility of colliding with another yacht or even capsizing while leaving the port. The context of the water is rapidly changing. At the same time, there is pressure to move ahead of the other boats. The requirement for possible rapid action is intense so that each member of the crew or team is alert, engaged, and prepared to act, as highlighted in the following description:

The team find a position from which to begin the race [[Calm in the Chaos](#)] The yacht is busy with multiple centers of activity, each team member assigned a particular role and intently focused on a precise set of tasks and a position. Conversation between team members is near constant and facial expressions appear positive. Team members coordinate to move from one side of the boat to the other to re-balance it. On another occasion, a few duck their heads to avoid being hit by the boom. At one point, a sailor holds onto the boom to keep it steady, and, perhaps, steady himself. The possibility of serious injury, for instance, being hit by the boom in the torso or the head, or the potential for collision with another boat is high. All the boats at the start of the race are in close proximity and the atmosphere immediately after the beginning of the race is one of anticipation, excitement and energy, and yet the crew remain calm.

Smooth sailing

In the second temporal bracket, we observe both low internal team adversity and low external (environmental) adversity. We characterize this as *Smooth sailing* as the markers of team adversity (e.g., interpersonal friction/tension) and external adversity (e.g., extreme weather, collision, or near miss) are not observable. Instead, the team shows signs of relaxation (sitting together) and enjoyment (smiling, joking, laughing, and looking at each other). After the energy and focus of the start of the race, the team appears to settle into well-rehearsed tasks and fluent maneuvers around the yacht, displaying team co-operation and co-ordination. They appear to be comfortable in their relationships as outlined in the following description:

The yacht sails about 300 km north of Sydney and the deck appears tranquil. It is apparent from the crew's interactions and the flow of conversation and their physical stances that everyone appears in a good mood [[Smooth Sailing](#)] At the wheel, a team member stands with his legs slightly akimbo suggesting a relaxed attitude [[Relaxed Crew](#)] Team members are generally at ease with each other, one sitting slightly reclined against the side of the boat. Another eats a meal as he sits looking out to sea. The conversation ebbs and flows with voices even in pitch.

The crew is in flow, and the race is going well; there is a strong positive expectancy emphasized when the navigator states loudly: "Big gain here to us ... We're up with the big boys. We've got 24 hours of this. We're going to rip through them." There is the anticipation of success.

A perfect storm?

In the third temporal bracket, we observe both relatively high levels of internal team adversity and high external team adversity. We characterize this as a *perfect storm* as the markers of external adversity (e.g., an extreme weather event) and internal team adversity (e.g., feared equipment failure and sudden loss of input from a key crew member) are both observable and loom over the harmonious operation. A storm cloud develops, out of nowhere, not signposted by the meteorologist or the information provided on-screen at the navigation station. The race and the plan go off-script. The storm, an experience of acute external adversity, was not anticipated ahead of time by the navigator, the sophisticated radar equipment, or the two onshore meteorologists—the crew was making decisions with imperfect information. This event is "novel," "critical," and "disruptive"—terms that were constant themes in the literature. The uncertainty and unexpectedness of the situation represent multiple forms of external adversity.

In contrast to the earlier temporal brackets, there are observable signs of the effect of external team adversity on internal team adversity. The atmosphere, which has up until this point been relaxed, suddenly becomes nervous with team members looking visibly concerned, as described in this vignette:

The navigator becomes quite tense. There is a problem with one of the algorithms, the navigator has become worried about the competitor boat and plans to do a jibe. To the north of the cloud, the wind is strong and allows the main rival yacht to increase her lead to ten nautical miles. The team must act quickly, but they are not working as interdependently as in previous footage and their actions appear to be

somewhat hampered. One of the crew can't find something he needs, others criss-cross in front of the navigation system, as if they are looking for things, checking for more information. The team seem slightly unsure of how to respond to the adverse event. Understandable given at one point the navigator stops the previously ordered maneuver—"don't pull it" and issues a reverse instruction.

For a racing team, no wind or windless weather is one of the most adverse conditions to face. It may not take the form of conventional external adversity, but the lack of wind and energy causes a critical event. Because the rival yacht was on the far side of the storm cloud, it was able to move ahead, which put into jeopardy the study yacht achieving its key goal of winning the race.

During the acute external adversity, most of the crew find the situation difficult to bear, are unsure of what to do, and observe their leader distressed. At this point, the owner insists that the cameras are switched off. The navigator's distress (see Table 3) at how the team is handling the external adversity appears to trigger internal team adversity that contributes to a temporary decline in the crew's performance (e.g., slower response times). The team is now channeling their energy and focus toward managing their own emotions and sailing without a fully functioning relationship with their navigator. First, there is an acute disruption to the dynamics (Stoverink et al., 2020) of the small crew—each with highly specialized roles—working in close quarters. Second, the sudden disruption to the crew dynamic combined with visible displays of distress from several crew members appears to produce a tension that other team members feel the need to respond to by either offering sympathy or by taking on extra duties. This situation can be likened to sailing without a rudder. The need to respond to internal adversity therefore diverted attention from responding to the external weather-related adversity the crew faced.

At the same, time there is some evidence in this temporal bracket to indicate that the crew started to quickly bounce back (Stoverink et al., 2020) from the internal team adversity experienced. For example, some of the crew members meet the situation with shared humor, resignation, or acceptance, demonstrating an ability to contain the upset (Dutton & Heaphy, 2003; Stephens et al., 2013). One participant stated, "you gotta put your head down and get back to work, there's no point dwelling on the past, you gotta come up with the next game plan."

Chaos in the calm

In the fourth temporal bracket, we observe high internal team adversity and low external team adversity. The physical environment (no wind) remains the same so the degree of external (environmental) adversity is reduced, in part because the change to the weather is no longer unexpected. We characterize this as *chaos in the calm* as the markers of internal team adversity (e.g., sudden unavailability of a key team member to continue their role; see Stoverink et al., 2020) are observable. This temporal bracket suggests that there is a recursive relationship between team relationship quality and team adversity.

The navigator begins to swear, 'it's going to be a f**king disaster! 'F**k!' (1.20 am, Day 3—[Chaos in Calm]). He stands up, calls out something to the team on deck, tries out ways to overcome the lack of wind, including a risky jibe manoeuvre

TABLE 3 Key themes in data analysis.

Theme	Indicative quotations from post-race interviews	Indicative video observation excerpts	Link to literature
Anticipating the importance of team relationship quality	<i>“We just wanted people as always with the right attitude but people that have the right skill sets that we need but can also get on with other people, so there’s no big egos and it’s about having people that can work with their hands and fix certain things and then everyone can get along at the same time in the elements”</i> (P2)	Post-race interviews were effectively audio only (in the dark).	Team resilience (Duchek, 2020; Stoverink et al., 2020)
“Bouncing back” from external team adversity	Volatile weather conditions. <i>“It was pretty chaotic there for a while, I think we got ourselves out of it and the response was as good as could be expected. The conditions were dark, rainy, no wind, which way we are going, creates a lot of chaos. We came out of that, and everyone settled down and off you go again.”</i> (P1) <i>“You can’t control the weather”</i> (P2)	The next morning, the deck looks very untidy and chaotic with multiple ropes everywhere. One of the crew (P8) on the deck is looking for a piece of equipment and is unable to find it but finally calls out ‘found it’, and then adjustments can be made to the sail at the very front of the yacht.	Adversity caused by external factors (van der Vegt et al., 2015)
“Bouncing back” from internal team adversity	Relational strain. <i>“The [Navigator] took it pretty poorly, almost personally, everyone else pretty much just carried on and sailed the boat”</i> (P5) Equipment failure. <i>“When we have a couple of winches on the wrong side of the boat overload and I’m sitting back there watching I love the way the guys in the pit in their individual positions can work out how to re-route lines, so you still have an open winch”</i> (P1)	Cameras were switched off.	Adversity caused by internal factors (Stoverink et al., 2020)
Team capacity to recover from relational strain	<i>“To me being part of a crew where everyone contributes, and no one is a sour puss is a very precious thing and</i>	Two crew members (P3) and (P4) can be seen bringing cups of tea to the navigator (still visibly	Relational tenility (Brueller et al., 2019;

(Continues)

TABLE 3 (Continued)

Theme	Indicative quotations from post-race interviews	Indicative video observation excerpts	Link to literature
	<p><i>we've done that and that's why I keep coming back.</i>" (P1)</p> <p><i>"It wasn't like sour grapes or damn it, let's give up, so I think they got back to the job at hand."</i> (P6)</p>	<p>emotional) over the course of several hours.</p> <p>The owner and the navigator sit in the cabin, in the dark, at the navigation station. They can be seen discussing the unpredictable weather while smiling and laughing. The navigator leaves the station and goes on deck and the owner sits down. They switch roles seamlessly without anything being said.</p> <p>Frequent eye contact between P9 at the front of the boat and P6 at the back of the boat.</p>	<p>Dutton & Heaphy, 2003)</p>
Team capacity to absorb others' negative emotions, language, and behaviors	<p><i>"[The navigator] got the shits, f..., f..., f... . I think everyone else just got on with the job and got sailing."</i> (P5)</p> <p><i>"There was a kerfuffle on deck, everything was upside down there for a while, but we got ourselves out of that and continued on course"</i> (P1)</p>	<p>Navigator appears visibly upset. Some crew members move toward him with looks of concern on their faces, whereas others, such as the helmsman, immediately take on the tasks usually completed by the navigator, including steering the yacht.</p>	<p>Emotional carrying capacity (Dutton & Heaphy, 2003; Stephens et al., 2013)</p>
Team capacity to remain open to others' suggestions, new ideas, and creative solutions	<p><i>"I know I'm just so proud of the crew. To me being part of a crew where everyone contributes, and no one is a sour puss is a very precious thing and we've done that and that's why I keep coming back."</i> (P1)</p> <p><i>"Think physically we were a little bit cumbersome because it was raining, and it was tricky and bumpy and no wind and we were slapping around but I think physically it was tougher but mentally we were good cause I think everyone said let's get on with it and I</i></p>	<p>At the moment of crisis, the navigator suggests a jibe, which does not work. The two crew members at the front of the boat remain focused and continue to try out different solutions to the problem of no wind.</p>	<p>Connectivity (Carmeli et al., 2009; Dutton & Heaphy, 2003)</p>

TABLE 3 (Continued)

Theme	Indicative quotations from post-race interviews	Indicative video observation excerpts	Link to literature
	<p><i>found that more reassuring myself personally but as a team I thought it was good”</i> (P2)</p>		

intended to take the boat out to the east with the aim of harnessing more wind. He mentions again that the kettle has boiled, that they are wasting gas. He speaks to one of the other crew members with a strong sense of irritation in his voice. He keeps returning to the navigation station but seems uncertain of the best course of action. He stands up, talks through the jibe option with one of the other crew, mutters to himself, sits down again and looks again at the screen glowing in the dark. The boat, navigated by the leadership team, finds itself ‘parked’ at a complete standstill. The boat is in a pocket—the sails flap and the boat bobs on the spot but there is nothing to be done [Cloud Troubles]. Shortly later the navigator loses his temper and states he wants a 30-minute lie down but is unable to take it—the team put him on “suicide watch”. The camera has been turned off.

The navigator has most of the responsibility for the performance of the crew and is the one who responds most acutely to the pressure; he appears to be experiencing emotional overload (Stoverink et al., 2020) and extreme forms of distress (“suicidal”) and is therefore temporarily unable to continue their highly specialized role of managing the personnel and strategy on the yacht. In contrast, the skipper remains able to navigate and steer and appears to remain calm. One possible interpretation here is that it is safe for the navigator to express his overwhelm due to the high quality of relationships and trust that the team will both cover the task and remain respectful.

At the same time, the data suggest that it is a challenge for the crew to perform each of their individual roles. After several actions have been tried out unsuccessfully, including the risky jibe, there is no other option but to do nothing, perform no action, and accept the unexpected turn of events. One or two crew members busy themselves with preparing hot drinks, and handing them out to the crew, keeping in mind it is approximately 2 a.m. and cold on deck. As such, despite the strain produced by the dramatic and negative outburst, the crew provide actions that communicate social support (e.g., checking in, listening, joking, and providing hot drinks) and therefore arguably demonstrate comfort with displaying both positive and negative emotions (Dutton & Heaphy, 2003; Stephens et al., 2013). The focus in this temporal bracket was therefore on maintaining and mending the team, an important process, and a way of responding to the adversities experienced.

A return to smooth sailing

In our fifth and final temporal bracket, we see a return to smooth sailing, mostly possible because of the quality of the established relationships (Carmeli et al., 2009, 2013; Dutton & Heaphy, 2003) among the key team members, as opposed to temporary or functional

relationships. In the video footage, one member of the leadership team is frequently observed on deck sitting to the right of the navigator, implicitly available if required and providing his physical presence in an affiliative act—which has the effect of calming the navigator. The team's actions enable the navigator to recover his equilibrium and, thus, the team to continue to sail to the best of its ability:

The third day of sailing again passes smoothly and without major incident. The team re-groups, accepts the adverse events—both external and internal to the team, and is even able to discuss in a calm way exactly what has occurred. The team performs its way out of the cloud to re-gain second position in the race. The following link conveys a calm atmosphere with no hint of what has occurred the previous night [Return to Plain Sailing]. In reality there was another incident of instructions from the sat nav, this time it was met with humor—Crew ‘Avoid all clouds,’ Navigator ‘I’m giving up on sailing’.

Optimism has returned. During the on board, post finish, race de brief, the leadership team are talking about how many times they've beaten ‘them’ (referring to the rival they have just lost to). ‘... We've beaten them at the Bird Island race ... open water. We've beaten them at the Flinders race convincingly. And the Newcastle race. And this race. We would have beaten them.’ Craig: ‘There was no problem. Only the weather.’ He doesn't acknowledge his response to the weather as a problem at this stage. That comes later.

This return to smooth sailing suggests the importance of team relationship quality in returning to pre-adversity levels of team performance.

Influences of relationship quality on team resilience processes

At the start of the race, the team was effective in the context of challenging external conditions. The quality of the team relationships appeared to be one aspect of the team's ability to work interdependently in close quarters despite adversity. However, in the two instances of internal team adversity in our data, we see the team respond quite differently. In the first example, an unexpected storm (characterized as a source of unpredicted external [environmental] adversity) triggered relatively higher levels of team adversity (frustration, uncertainty, anxiety, awkwardness, and disappointment) whereby the potential of losing ground in the race appeared to affect the team interactions on the yacht. In the second example, the storm has passed but adversities appear to have escalated at the team level, whereby there are raised voices and individual failure to perform. Decisions appeared to be influenced by the strain between members of the team, including attending to team adversity distracting from the team's key task of racing. These observations suggest that team relationship quality influences both internal team adversity and the possibility of managing external (environmental) adversity.

At the same time, we also found evidence to suggest that relationship quality influenced the team's ability to dedicate time and energy to the processes that underpin team resilience capacity. Hence, team relationship quality appears to influence the team's capacity to manage both internal and external team adversity. For example, during the period of acute team adversity (*the chaos in the calm*), the team navigated the expression of highly negative emotions (e.g., swearing, frustration, and disappointment) constructively (Stephens et al., 2013) in ways

that enabled them to recover the quality and connectedness of their relationships quickly (Carmeli et al., 2009, 2013; Hartmann, Weiss, Hoegl, & Carmeli, 2021). For example, the rest of the team continue to perform the actions appropriate to each of their individual roles and coordinate a collective response which, temporarily, does not include the navigator. They can persist with the shared task of steering the boat, taking turns to stand at the wheel, sharing leadership responsibilities, and carrying out leadership decisions together. This type of relational quality might be somewhat similar to the idea of relational tensility (Brueller et al., 2019) whereby a set of relationships are flexible and strong enough and where there is sufficient goodwill prior to an adverse event to allow the relationships to rebound to their original quality (see also Stoverink et al., 2020 on team polarity and brittle teams) despite the team and/or external adversities encountered. The ability to demonstrate comfort with both positive and negative emotions (Dutton & Heaphy, 2003; Stephens et al., 2013) was also observable. For example, one segment of the video shows two crew members at the front of the yacht continuing to perform effectively as a dyad despite strong displays of negative (e.g., outbursts and swearing) and positive emotions (e.g., smiling, laughing, and consoling) by the surrounding crew members.

The interviews were conducted immediately after the race; while the crew was still on board, they specifically asked “Do you think the team bounced back?” The crew’s self-assessment was that they had bounced back well. The navigator noted that it helped him to know that the team was working together well, replying “I think everyone said let’s get on with it and I found that more reassuring myself personally.” The ability to de-escalate the situation, determine a new navigation strategy, and get back on track demonstrated the value of high-quality relationships to team resilience. Without it, they may not have been able to recover from the disrupted dynamic triggered by shifting types of adversity across the duration of the race.

Data excerpts supporting these findings are summarized in Table 3.

DISCUSSION

In this section, we develop a novel conceptualization of the relationship between team resilience, external adversity, and internal team adversity across time. We then provide inductive theorization of how relationship quality influences team resilience processes in the context of shifting adversities.

Implications of adversity type for team resilience processes

As the race unfolded, the yacht team encountered both external and internal team adversity. Sometimes during the race, a type of adversity was experienced in isolation, at other times internal team and external adversity were experienced in combination, whereas occasionally, no adversity was experienced. This suggests that in a single contemporaneous period, teams experience constant shifts in the adversities they act upon and adapt to. We summarize these theoretical insights in Figure 2, which presents a juxtaposition of the degree of team adversity experienced and the degree of external adversity experienced. Figure 2 therefore contributes to understanding how different types of adversity (in this case, external team and internal team adversities) interdependently affect a team’s ability to be resilient over time.

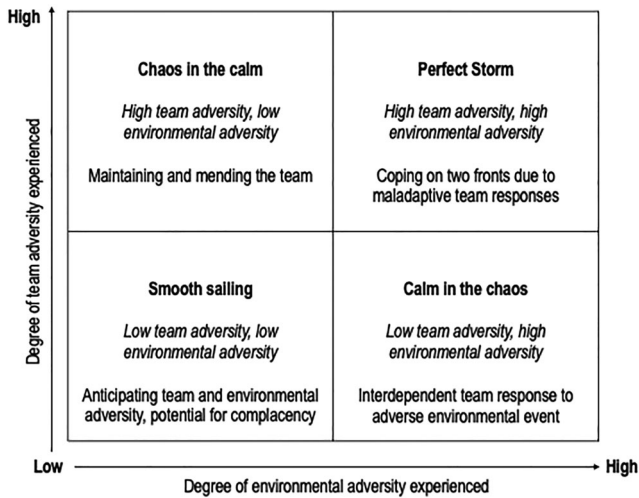


FIGURE 2 The role of external and internal team adversity in shaping team resilience processes.

The first implication of Figure 2, building on our findings, is that external adversity does not necessarily trigger internal team adversity. Our first temporal bracket (*calm in the chaos*), involving low within-team and high external adversity, suggests that under some conditions external adversity might help a team to focus on their interdependent and time-sensitive tasks and to perform cohesively. Arguably, the urgent nature of an expected event (van der Vegt et al., 2015) in the team's operating environment can reduce the opportunity for team adversities to surface. In contrast, in our fourth temporal bracket (*chaos in the calm*), we see the team in a period of non-action, which allowed space for ruminations, which in turn leads to some signals of acute internal team adversity in the form of an individual outpouring of negative emotion (Stoverink et al., 2020). Although this period was characterized by relatively low external adversity in the form of direct threats to the crew and their safety, the cloud (a chance adverse event) was perceived as a threat to the team's competitive position.

Second, our findings suggest that the continuity (or discontinuity) of team experience plays a role in the transition between low and high adversity conditions. In the combination of our second temporal bracket (*plain sailing*) and third temporal bracket (*perfect storm*), we see some evidence to suggest circumstances in which external and team adversities reinforce and intensify each other dynamically in relation to their impacts on team functioning. For example, early in the race, there was a period when there were low levels of internal and external team adversity, which appeared to be mutually reinforcing (*smooth sailing*). Then, as an unexpected weather event affected the team and its progress (*perfect storm*), we see relative levels of internal team adversity rise (*chaos in the calm*). The following proposition summarizes the effect.

Proposition 1. *External adversity (including disruption) can trigger internal team adversity when there is a significant discontinuity in the team's experience of their operating environment.*

Third, when resilience is understood as a capacity (see Britt et al., 2016), which involves processes of anticipating, acting, and adapting across time (see Duchek, 2020), this suggests that the adversity/adversities experienced at a given time may structure the deployment of team

resources (e.g., time, attention, and energy). For example, in the context of low team and low external adversity (*smooth sailing*), there is time and space for the yacht team to dedicate energy toward preparing for future adversities, such as checking equipment, rehearsing plans, and practicing maneuvers. In a high internal and external team adversity context (*perfect storm*), the team is having to cope with adversities on two fronts, which limits the time and energy available to respond effectively to either type of adversity. In contrast, where we see a single adversity type, the team's attention is drawn from *anticipating* and mitigating future adversity to *acting* in response to the type of adversity experienced. For example, in a context of high internal team adversity and high external adversity (*chaos in the calm*), the team may have to act to maintain the team and adapt to mend the team. In this sense, experiencing within-team adversity in isolation appears to distract the team from anticipating and adapting to external adversity. In stark contrast, low team adversity appears to have a positive effect on the handling of predictable external adversity (*the calm in the chaos*) as it allows for the team to muster a cohesive response to an anticipated challenge because all the capacity can be deployed towards the threat or actuality of an emerging adverse event, thus suggesting the central influence of team relationship quality on team resilience. The significance of the external adversity to the team may therefore be key to the response. Critically, in this case, the potential blocking of the primary goal of winning was undoubtedly a factor in triggering internal team adversity. And arguably, it was also a factor in the team's "mending" to a point where, despite the storm, they recovered to place second in the race. These findings led to Proposition 2.

Proposition 2. *The type of adversity experienced shapes the processes enabling team resilience.*

Influences of team relationship quality

Having argued that the interaction between types of adversity affects a team's resilience capacity across time, we now return to the influences of team relationship quality. At times in the race, the crew was effective despite adverse external conditions, whereas at other times, internal team adversity was sustained in relative isolation. Because adversity (or its anticipation) appears to be an inherent feature of teamwork this influence is nuanced. In this study, we observed an experienced yacht racing crew with a strong track record of success in their specialist arena, and yet, somewhat inevitably internal team adversity (Stoverink et al., 2020) emerged across the 72-h period. This suggests that conceptual complexity in relation to understanding team resilience emerges from both (i) the dynamic nature of relationship quality and (ii) a potential tight coupling between the ebb and flow of both relationship quality and internal team adversity across time. Our findings therefore suggest the need to distinguish between the enduring aspects of relationship quality that either positively or negatively influence team resilience across time versus the shifting displays of relationship quality (e.g., emotional outbursts) that can emerge in even well-connected teams (Carmeli et al., 2013) that are seeking to tackle challenging tasks. We therefore propose that team relationship quality (Dutton & Heaphy, 2003) is a key influence on the relationship between adversity type and team resilience capacity.

The crew was able to draw on certain features of their relationship that allowed them to carry on despite both team and external adversities. For example, they were able to cope (Duchek, 2020) with team adversity when it emerged by drawing on the strength of their relationships to withstand such adversities (Brueller et al., 2019) and by constructively dealing with

negative emotions and language when needed (Stephens et al., 2013). This is important because our findings suggest that dealing with internal team adversity can distract attention, time, and energy from team resilience processes, including the anticipation and mitigation of team adversity. Quality of team relationships therefore appeared to influence both how the crew experienced team adversity and their ability to quickly rebound from its effects. Together these findings suggest Proposition 3.

Proposition 3. *Team relationship quality influences the relationship between adversity type and team resilience processes.*

Navigating the bouncing ball

As noted in the team resilience literature, there is an absence of data on the dynamic processes and lived experience of team resilience in action (Britt et al., 2016, p. 394; Duchek, 2020). In our study, we found that relationship quality was of crucial significance in the processes through which the crew addressed the “bouncing ball” of the situational interactions of the team and external adversity over time. The study inductively theorizes the importance of team relationship quality for team resilience in preparing for, managing, and repairing from dynamic situated interactions between internal team adversity and external (environmental) adversity.

Implications and limitations

Our findings suggest a range of implications for practice, particularly for teams that are exposed to diverse forms of adversity. Our study shows the important influence played by team relationship quality on the likelihood of internal team adversity emerging and the important role that relationship quality plays in recovery from internal team adversity. This suggests that teams are ought to invest training time in developing relationships that are strong enough to withstand the expression of negative emotions that can emerge in the context of high adversity levels (Brueller et al., 2019). Anticipating that at some point team adversity will emerge, teams may also benefit from learning to deal constructively with other team members expressing negative sentiments and using negative, or downbeat, language by developing emotional carrying capacity (see Stephens et al., 2013). Teams also should be alert that under some conditions, discontinuities in their experience of their environment can trigger internal team adversity. Our observations suggest that anticipating and mitigating the risk of team adversity is as crucial to team resilience as anticipating external adversity. Finally, teams might benefit from understanding how different types of adversity, as well as their combination across time, might affect their resilience processes. The matrix presented in Figure 2 could therefore serve as a useful guide to teams considering the effects of adversity on their performance.

Our study has several limitations that future research concerned with theorizing the dynamics of team resilience in the face of diverse adversities could usefully address. We study a single yacht racing crew across a 72-h period. Although our video observation supplies a rich source of process data in a context with the potential to surface multiple adversities, the specificity of the crew observed potentially limits the generalizability of our findings to more mundane work settings that may experience lower levels of external adversity. Additionally, the observed crew are highly trained and have considerable experience in both competitive yacht racing and

working with one another to perform interdependent tasks in adverse conditions (e.g., poor weather and equipment failure). As such, we might reasonably anticipate—given the previous racing successes—that they demonstrate (see Britt et al., 2016) some level of resilience.

Future studies could explore whether teams in similar high-risk settings (e.g., mountaineering teams, military teams, and emergency services) are similarly affected by the types of adversity that they experience across time. Such studies could usefully take a comparative process approach by viewing multiple teams in action to understand variations in the relationships between adversity type and team resilience capacity. The theoretical implications of this study could also be examined in mainstream work settings characterized by different forms and intensities of team adversity, extending the understanding of boundary conditions in the role of relationship quality in team resilience processes. Increasingly, all organizations, as well as the teams within them, are confronted by both external adversity (e.g., unexpected economic and geo-political events) and internal team adversity (e.g., work intensification and reduced resources). As such, the ideas developed in this paper could assist in creating an understanding of how adversity type and relational quality influence team resilience processes across time in a wide range of team settings.

CONCLUSION

In this study, we sought to understand how teams navigate external (environmental) adversity and internal team adversity through resilience. Extending prior research, we characterize team resilience as the processes required to manage both external and internal team adversity. In qualitatively exploring team resilience, we employed a process perspective that allowed us to study how the type of adversity encountered across time and variations in the quality of relationships affected team resilience. Through video observations and interviews we explored the ways in which relational quality involves working interdependently to (i) anticipate and minimize the risk of external and team adversity, (ii) cope and improvise during shifting types of adversity, and (iii) learn and mend in ways that enable a return to, or beyond, pre-adversity levels of performance. From these findings, the paper makes two main contributions. First, it provides a novel conceptualization of how external (environmental) adversity and internal team adversity affect team resilience across time. Second, we offer theorization of how relationship quality affects team resilience in the context of shifting types of adversities.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare that are relevant to the content of this article.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS APPROVAL

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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