Team Resilience Emergence: Perspectives and Experiences of Military Personnel Selected for Elite Military Training

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Abstract

We conducted a longitudinal (3-month) qualitative study to examine elite military personnel’s (N=32) experiences and perspectives of team resilience emergence following two team-oriented training courses within an 18-month high-stakes training program where personnel are required to operate in newly formed tactical teams for extended periods. Our thematically informed interpretations of the participants’ subjective experiences of reality were constructed according to five key themes: (i) adversity is an enduring, shared experience of an event; (ii) individuals recognise adversity through physiological and/or behavioural states; (iii) self-regulatory skills underpin individual performance, yet social resources bind them together to set the foundation for team resilience; (iv) shared experiences of adversity and collective structures strengthen social bonds and mental models needed for resilience emergence; and (v) behavioural processes and shared states are how individual and team capacities are translated into performance under adversity. These findings provide novel insights that supplement our current understanding of team resilience emergence, including the varying means by which adversity may be collectively experienced, synergies between specific forms of adversity and resilience processes or protective factors, and the unique influence of performance context (e.g., task type).

Keywords: adversity, contagion, group dynamics, situation awareness, temporal dynamics, trust.
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Teams represent critical building blocks of organisational success across many industries (Salas et al., 2018) who are often exposed to experiences of major stressors or adversities that pose threats to their optimal functioning. Sustaining or bouncing back relatively quickly to optimal levels of collective functioning following adversity exposure, that is, displaying emergent team resilience, has intuitive and practical appeal (Gucciardi et al., 2018). Scholarly work on team resilience has gained traction in recent years (Chapman et al., 2020; Morgan et al., 2017), resulting in enhanced understanding of key determinants and the processes by which such factors foster team resilience emergence (Bowers et al., 2017; Gucciardi et al., 2018; Stoverink et al., 2020). Nevertheless, no empirical research has yet been directed towards examining the validity of these conceptual expositions of hypothesised determinants and processes with teams undergoing stressful experiences. We addressed this gap by conducting a longitudinal, qualitative investigation of team resilience emergence in a sample of personnel who were undertaking elite military training.

Team Resilience Emergence: A Brief Snapshot

As might be expected for a new area of research (Chapman et al., 2020), scholars have defined team resilience in varying ways (e.g., capacity of a team, Glowinski et al., 2016; psychosocial process, Morgan et al., 2013); nevertheless, most contemporary scholars define team resilience as an emergent property of a team’s inputs and processes (Bowers et al., 2017; Hartwig et al., 2020). We subscribe to the definition of team resilience as “an emergent outcome characterised by the trajectory of a team’s functioning, following adversity exposure, as one that is largely unaffected or returns to normal levels after some degree of deterioration in
functioning” (Gucciardi et al., 2018, p. 735). Defining team resilience as an emergent outcome alleviates limitations of capacity and process-based definitions, such as a reliance upon the inferred positive functioning of a team in the context of adversity and ambiguity surrounding the necessary and sufficient characteristics distinguishing related concepts (e.g., adaptation). This definitional perspective aligns with recent calls to reconceptualise resilience as an emergent outcome of a system’s trajectory of functioning (e.g., Kalisch et al., 2017). In taking stock of past work, Gucciardi et al. (2018) proposed a multilevel conceptual model of team resilience emergence including nine propositions that capture the essence of this phenomenon (see Figure 1). Conceptual (Hartmann et al., 2020; Hartwig et al., 2020; Stoverink et al., 2020) and empirical work (e.g., Karlsen & Berg, 2020; Talat & Riaz, 2020) has supported several elements of their model of team resilience emergence. However, the usefulness of this model in its entirety as an explanation of key conceptual building blocks and their interrelations for understanding the how and why of team resilience emergence remains empirically untested.

**Theoretical Contributions**

We offer three key theoretical contributions to the literature on team resilience. First, we evaluate within a military context the practical relevance of these nine core propositions and their integration for characterising team resilience emergence (Gucciardi et al., 2018). This contribution is important because these conceptual propositions of team resilience emergence were assembled from literatures fragmented across diverse scientific disciplines (e.g., psychology, organisational behaviour) and occupational contexts (e.g., Defence, medical). In so doing, we examine the scientific utility of a conceptual exposition of team resilience emergence (e.g., conceptual boundaries) via an appreciation of the degree to which the conceptual building blocks and their interrelations reflect organisational realities (Hambrick, 2007). This contribution
also has broader implications for the field of team resilience; scholars have proposed several
conceptual expositions of team resilience (e.g., Hartwig et al., 2020; Stoverink et al., 2020),
despite a limited body of empirical work (Chapman et al., 2020), so there is an urgent need for
examinations of their practical relevance.

Second, we provide a contextually and temporally rich description and interpretation of
team resilience emergence that sheds light on the interplay between the conceptual building
blocks and how they unfold over time within the context of high-stakes military training
characterised by substantial demands and challenges spanning several months. Context is an
essential feature of theory development and evaluation in the organisational sciences, yet
something that is often overlooked and therefore has the potential to perpetuate incomplete
theoretical expositions of organisational phenomena (Johns, 2006; Whetten, 2009). This
contribution is needed because of the reliance in past work on cross-sectional snapshots of team
resilience where protective factors and processes are considered largely in isolation from the
stressors or adversities that trigger the dynamic emergence (Chapman et al., 2020). High-stakes
occupational domains such as the military represent ideal contexts in which to study team
resilience emergence because adversity is prevalent in both training and operational contexts. We
focus on military personnel selected for elite military training in the current study because
training typically prioritises the systematic input of adversity for testing the capabilities of
individuals and collectives. The key question of “resilience to what” can therefore be examined
with precision and consistency across multiple phases of a training program.

Third, we focus on newly formed teams at the early stage of their life-cycle to afford
understanding of the critical inputs and formative processes at play during team resilience
emergence. Team type considerations for team resilience emergence are inevitably influenced by
the team’s development stage (Gersick, 1988). Research on team resilience thus far has typically studied mature or established teams (Furniss et al., 2011; Morgan et al., 2015) often in the absence of specific knowledge of adversity events. Newly formed teams are ideal for examinations of emergent phenomena as opportunities to observe emergent processes may be rife within the early stages of the life-cycle, relative to established teams where these processes may have already occurred (Allen & O’Neill, 2015). Thus, observation of newly formed teams during their early stages of formation represents a unique vantage point upon which to explore team resilience emergence and to provide an insight into the amount of time required for this emergence process to occur that would be largely inaccessible within established teams.

**Present Study**

Maximising synergies between concept and method are essential for knowledge advancements on team resilience emergence. We align concept and method via a longitudinal approach that permits insight into the emergence process via exposure to multiple adversities. In so doing, we explored the experiences and perspectives of personnel selected for elite military training from a larger pool of candidates regarding team resilience emergence, specifically regarding two training courses across an approximately 4-5 month period within an 18-month training program.

**Methods**

**Philosophical Standpoint**

We adopted an interpretivist paradigm whereby our understanding of participants’ perspectives and experiences was grounded in socially and experiential personal interpretations of our team (Malterud, 2016). Our ontological view is underpinned by a relativist approach in which reality is multiple and indistinguishable from people’s subjective experiences of the world.
(Nicholls, 2009). To understand the subjective nature of reality and multiple truths, we adopted a constructionist epistemological perspective, whereby knowledge was acquired through the co-development of meaning between the participants, researchers, and their relationship in a social interaction (Malterud, 2016). Inherent within this approach is the notion of research reflexivity over objectivity, and an acknowledgement of the researchers’ influence within the research process. In other words, the findings reported here represent our interpretations of the participants’ subjective experiences of reality.

**Sample and Context**

We conducted this study within the context of elite military training, namely a sample of Australian military personnel who were undertaking training to become qualified Special Forces operators. Candidates must first complete a multi-week selection course that tests their physical and mental abilities and replicates the demands of operational environments. The pass rates on these courses are relatively low (e.g., in the vicinity of 20%; Gucciardi et al., 2015; Gucciardi, Lines, et al., in press). Consequently, each year only a select (‘elite’) group of personnel will progress onto Special Forces training. This training is conducted over approximately 18 months during which time candidates must demonstrate the required performance standards on all components to pass the program and qualify for entry into Special Forces units. Candidates must demonstrate proficiency in a broad range of tasks such as basic patrolling, roping, parachuting, close quarter combat, demolitions, signals, and combat first aid. The course requires individuals and teams to learn complex skills within a finite period and demonstrate these skills during activities that are representative of special operations missions. Throughout this training, candidates are exposed to numerous acute and chronic stressors including having to: (i) assimilate new information when fatigued; (ii) acquire new skills within a defined period; (iii)
make decisions and complete tasks under time pressure; (iv) meet performance standards at all
times; (v) experience constant uncertainty about whether one will be selected at the end of the
course; (vi) work in austere conditions (e.g., extreme weather, high altitude, variable terrain,
minimal food and sleep) for extended periods; (vii) perform at a high level with limited
opportunities for rest and recovery; (viii) be away from home/family; and (ix) complete tasks
involving major safety risks (e.g., firing live ammunition). Collectively, exposure to such
different adversities, situated within a program that requires individuals to work in teams on
tasks that emulate real-world job demands, makes the course a useful context to study team
resilience emergence.

We focused on military personnel who were completing elite Special Forces training
because their program represents an ideal context for our scholarly goals. First, teams are critical
to Special Forces missions; typically, personnel will operate in small teams of 4-8 members who
work together for extended periods and often without direct support to achieve mission
objectives. The training program focuses on identifying individuals who have the potential to
excel as part of a small team and equipping them with the requisite knowledge, skills, and
abilities to do so. Second, team composition within the Special Forces training program is
dynamic, whereby teams are newly formed towards the start of each training course, in part due
to membership changes throughout the overall 18-month program (e.g., candidates removed for
not meeting the required standards, teams strategically recomposed for assessment purposes).
This contextual feature meant team composition changed considerably between each data
collection point, yet teams were recomposed of members of the same overarching training cohort
and changed minimally between courses. These changes in team composition afforded an
opportunity to explore the development of shared realities after multiple experiences of forming
new teams and thus experiencing ‘swift’ resilience emergence within the boundaries of a specific organisational context. Third, adversity is a characteristic feature of the training program for the entire 18-months; candidates must complete a variety of physically and mentally demanding scenarios that are indicative of those required during actual special operations missions. Although adversity is present throughout the entire course, our discussions with the training staff identified two critical points in the program which they believed were ideal opportunities to collect data for our study. These two points were at the completion of the patrol course and close quarter battle training modules; these two were specifically chosen because they involve having to learn complex skills, working effectively as a team, operating in austere and dangerous conditions, and are typically regarded by training staff as the most challenging courses for candidates to perform well on. These ‘adversity touchpoints’ provided a necessary backdrop upon which to generate a contextualised understanding of the temporal dynamics of team resilience in an ecologically rich way.

We sampled participants for this study from one of the annual intakes of candidates undergoing Special Forces training within the Australian Defence Force. Our research team tracked these teams for 12 months prior to data collection as part of a larger project (e.g., self-reported surveys, physiological assessments of stress) and so were familiar with our research team and the nature of the work. Most personnel from this annual intake consented to participate in this study (N = 32 males; M_age=26.25±2.62 y); these personnel made up eight and seven teams at time point one and two, respectively. Participants’ prior experience in Defence varied (6.87±2.28 y) and included non-officers (e.g., Corporal, Warrant Officer; n=27) and officer ranks (e.g., Captain, Major; n=5).
Procedure

We received approval from a nationally accredited human research ethics committee prior to data collection. We adopted a longitudinal qualitative design to explore shared perceptions of team resilience via group interviews, and the temporal dynamics of these perceptions at two points, 3-months apart, within the context of an 18-month military training program. In total, we conducted seven group interviews across two time points (T1: 4 focus groups, 32 participants and T2: 3 focus groups, 24 participants). We collected data following two separate training courses deemed to contain the necessary richness and degree of challenge to potentiate key transformations within teams to permit explorations of the evolution of retrospective perspectives regarding team resilience emergence (Kozlowski et al., 2013). The initial wave of data collection occurred following participants’ first significant exposure to a team-based training course within their 18-month program, prior to which activities primarily involved the upskilling of individual based competencies. The focus groups were conducted in a seminar room located on a military base. The composition of these focus groups varied at each time point for logistical reasons, though each group typically included personnel from 1-3 teams (4-15 members); we always included personnel from the same teams for logistical (e.g., personnel from the same team performed training activities on the same schedule) and substantive reasons (e.g., personnel are best positioned to comment on collective dynamics in their own team). Focus group discussions, which ranged from 30 to 42 min (35 ± 4 min), were conducted using the same semi-structured interview protocol that was informed by conceptual work on team resilience emergence (Gucciardi et al., 2018; see supplementary material). The main differences in the focus group discussions between time points related to the types of probes we used to encourage participants to consider the temporal dynamics (e.g., how has [response] changed since last time
we spoke?). We guided the conversation to examine participants’ perspectives of adversities experienced during the training program and expectations of future adversities in the program, and key individual- (e.g., personal resources) and team-level (e.g., coordination, norms) determinants of team resilience emergence. Nevertheless, we welcomed participant driven deviations from this schedule to maximise authenticity and leverage group dynamics within the discussion. Due to the collective nature of the conversation, the interviewer adopted a facilitator approach where possible to allow group conversation to dominate and opportunities for agreement or conflict to occur (Bohnsack, 2004). Audio recordings of focus group discussions were transcribed verbatim prior to data analysis, with a total of 46,269 words spoken.

Data Analysis

MC conducted the data analysis, with the support of DG who has substantive expertise on team resilience and contextual knowledge of the military unit and Defence. Both analysts met virtually and in person on several occasions during the data collection and analysis process to discuss critically and reflexively their interpretations of the participants’ discourse and determine how best to illustrate the social construction of these unique perspectives. We adopted an abductive approach to data analysis (Sparkes & Smith, 2014), whereby we examined participants’ perspectives in accordance with the guiding conceptual framework of team resilience emergence (Gucciardi et al., 2018), yet remained open to new themes or ideas that may disconfirm these preconceptions or reflect them in unique ways.

We initially coded data at each time point separately in line with Braun and colleague’s (2016) six stages of thematic analysis with the use of NVivo software (QSR International Pty LTD, 2010): (i) reading and re-reading of interview transcripts and audio recordings; (ii) creating basic, data and theory driven nodes; (iii) grouping of initial nodes through the use of thematic
maps; (iv) collaborative checks of the codes, themes, and entire dataset; (v) identifying the
essence and boundaries of each theme; and (vi) producing the report. We considered both
semantic (i.e., explicit meaning from expressed statements, akin to the tip of an iceberg above
water) and latent (i.e., implicit meaning via interpretation of ideas and meanings, akin to the base
of an iceberg below the water level) details for the development of themes (Braun & Clarke,
2019). Thus, we actively created themes to “reflect patterns of shared meaning underpinned or
united by a core concept” that characterise participants’ experiences and perspectives on an
interpretive story concerned with team resilience emergence (Braun & Clarke, 2019, p. 5).

In line with the recurrent cross-sectional approach to longitudinal analysis of qualitative
research (Grossoehme & Lipstein, 2016), we compiled data for each overarching theme across
individual matrices to analyse the frequency and nature of responses across time. Specifically,
we mapped themes constructed within the cross-sectional analysis across time for the full cohort
of participants (see supplementary material). From these matrices we inductively constructed
themes from the raw coded information that reflected the nature of data at each time point. We
then examined patterns of consistencies or changes between the two phases including absence of
information to create temporal themes that characterise the dynamics of perceptions across time.
This approach was adopted to allow insight into the evolution of participants’ perceptions
surrounding team resilience emergence following repeated experiences of performing within
newly formed teams who were exposed to adversity.

**Methodological Rigor**

Consistent with a relativist ontology, we adopted several criteria to judge the quality of
the research (Burke, 2016). First, the worthiness of the topic was informed by a recent literature
review (Chapman et al., 2020) and conceptual exposition of team resilience emergence
(Gucciardi et al., 2018), and priorities of the key stakeholder (Commonwealth of Australia, 2016), such that our work reflected a nexus between substantive and practical importance.

Second, rigor was maximised through the adoption of a longitudinal sampling approach, and the uniqueness and relevance of the sample for the purpose of the study (Tracy, 2010). Third, we addressed credibility via ongoing engagement with participants and other key personnel in the unit (e.g., training staff) in the 12 months prior to the first focus groups, command approval and support for the project, and team composition (e.g., mix of academic and Defence scientists).

Finally, reflexivity is a logical contrast to objectivity and holds important value in the transparency of qualitative research (Malterud, 2016). This transparency was developed through a reflexive awareness of personal assumptions, values, and commitments of the researchers involved in data collection and analysis. One co-author acted as a “critical friend” (Sparkes & Smith, 2014, p. 182) for the lead analyst, with the view to evaluate the data collection and analysis iteratively, and provide a sounding board during the analysis (e.g., challenge assumptions or interpretations, offer alternative viewpoints). Relatedly, given the conceptual inconsistency between reflexive thematic analysis and saturation (Braun & Clarke, 2021), we prioritised information power or richness of participant knowledge as the most suitable metric for the sufficiency of our analysis.

### Results and Discussion

**Contextual evidence of emergence**

We based our inference of team resilience emergence across the two training courses according to two key pieces of contextual information. First, participants discussed the progressively challenging nature of the two training courses, and the requirement for successful
teams to maintain or quickly recover functioning in response to adversities embedded within the courses:

Your training just accumulates and your tasks get more complex. You’re going from like a zero skill level at the start when this patrol is all together to more complex...towards the later stage of the course, then things were getting a bit more hectic to that, some of those variations [in performance between teams] came out. [Time point 2]

Team members seemingly demonstrated a perceived growth in capacity to face stressful situations following the successful completion of courses. The competitive nature of these training courses also meant that teams who insufficiently demonstrated resilient performance following exposure to adversities were likely to be unable to complete training courses and likely incurred the removal of group members from the course. In other words, our sample were ultimately successful in utilising collective resources to navigate the individual and collective challenges embedded within the course.

From the training leading up to it, we just dealt with stressors the whole time so that we’ve kind of grown accustomed to it a little bit, that’s helped them get through. Because, like it’s not really that bad. I know we can dust this off and keep going if we mess up. [Time point 2]

I don’t think there’s been an adversity we’ve faced so far that’s been so overwhelming that we haven’t been able to cope. We’ve been able to work together and overcome it almost pretty instantaneously and then crack on. Work out the causes for it so it doesn’t happen again, and then carry on. [Time point 1].

Second, participants paid attention to the need for teams to demonstrate resilient trajectories of functioning. Participants discussed their experiences of witnessing teams unable to progress through the course when these trajectories were inadequate:

Yeah, in other groups, there was definitely times that they were double-checked (i.e., reprimanded or ‘looked after’ or taken away from the course) to a point if they weren’t [performing successfully]. [Time point 2]

These participant perspectives, coupled with the contextual understanding of the content and assessment of course performance, demonstrates support for the assumption that collective
functioning within these newly formed teams resembled contextually desirable trajectories following exposure to progressive adversities (for other examples, see Galatzer-Levy et al., 2018; Gucciardi, Lang et al., in press). Against this contextual backdrop, we created five overarching themes from our thematic analysis of the two waves of interview data to summarise participants’ experiences and perspectives of team resilience emergence (see Figure 2).

Adversity is an enduring, shared experience of an event

Adversity is central to the science of resilience because such events provide essential knowledge of ‘resilience to what’. Participants outlined a broad range of adversity experiences that varied in magnitude (e.g., degree to which the situation might destabilise homeostasis), frequency (e.g., once off or enduring), source (i.e., internal or external to the team), controllability (i.e., degree to which the team can control or influence an adversity), and the nature of sharedness (i.e., experienced simultaneously or concurrently by all members or progressively transferred from one member to others). In essence, adversity discussed within this context reflected a breadth of typically enduring, shared experiences that were underpinned by the desire to perform successfully over time.

Previous work has characterised team resilience as involving a shared experience of adversity, describing the ‘collective encounter’ of such experiences (Morgan et al., 2013). Participants discussed several examples across both time points that captured the ‘sharedness’ of adversity experiences in two unique ways via (i) convergent and (ii) complementary linkages. Regarding convergent linkages, participants referred to the common perceptions among team members, such as a shared physical demand or a change in task complexity for the team. This commonality characterised experiences that were instantly mirrored across teammates regarding physical exhaustion:
During our patrol course we had a shared adversity in that there was some pretty s**t terrain that we were going through and everyone’s physically taxed and that makes it a bit harder when you’ve got to make decisions. [Time point 1]

The second description of shared experiences of adversity captured instances where one or more but not all team members directly experienced adversity with or without the awareness of other team members. Although some team members did not experience such adversities directly, participants acknowledged a ‘flow on effect’ for team functioning as a shared adversity because of the common bonds (e.g., collective objectives).

So, I think everyone would, if something happened, being that someone went down, with heat or whatever happened, and that was considered an adversity by one person the whole group would have the same mentality towards that. So someone getting injured, everyone immediately knows, especially if you work in a small team, but this is an issue you need to get on straight away. [Time point 1]

It was evident in the participants’ discourse that adverse events experienced by some but not all members progressively transferred to other members via a contagion effect (Barsade, 2002). By and large, the shared nature of such adversities was underpinned by a type of emotional contagion acting upon team members. Emotional contagion, defined as the “process by which a person or group influences the emotions or behaviour of another person or group through the conscious or unconscious induction of emotion states and behavioural attitudes” (Schoenewolf, 1990, p. 50), occurs via several key processes. The examples of shared experiences described above are indicative of two such processes; the former of convergent linkages, whereby individuals share the same vantage point and interpretations of the same stimulus, and the latter of complementary linkages, whereby the reactions of one person are the stimulus for emotional contagion (Elfenbein, 2014). The key distinction is the perspective from which members experience and appraise an event. Convergent linkages typically result in situations where members experience a similar affective state, whereas complementary linkages lead to diverse
emotional experiences (Elfenbein, 2014). Congruency in affective states among team members, whether positive or negative in valence, are considered reflective of a shared team identity (e.g., Magee & Tiedens, 2006; van Kleef & Fischer, 2016). Shared positive emotional states in collectives in/directly affect group effectiveness, yet the effects of negative affective states appear contextually dependent (Barsade & Knight, 2015). For example, the coordination of a team’s affective state via complementary linkage may be beneficial to performance (e.g., optimising team arousal to deal with a threat or significant challenge) or detrimental (e.g., spreading of anxiety among team members) depending on the nature of the performance context and team dynamics.

The length of exposure is another key consideration for the characterisation of adversity (Cohen et al., 2019; Luhmann et al., 2020). Individuals spoke to several challenges that were considered adversities because of their pervasive nature across the entire course, particularly situations of continued assessment or long-term physical discomfort:

Many of us had pressure to perform. So constantly judged and watched on everything from like your kit layout, how everything was set up, to having your mag load-out, to how you were performing. That was probably the biggest stressor... I think everyone could agree that was like the biggest, yeah, factor to show resilience in a team and individual. That was like the biggest thing, I'd say. [Time point 2]

Chronic stressors appear most damaging due to the increased chance of exposure being present at a point of vulnerability for that system, permanent changes in the state of system that may have knock on effects, and increased wear and tear (i.e., allostatic load) on the system (Cohen et al., 2019). The availability of collective coping strategies to deal with such adversities is crucial for minimising potential risks when confronted with adversities of an enduring nature. Numerous inputs and mediators have been discussed in previous work on team resilience (Bowers et al., 2017; Gucciardi et al., 2018; Morgan et al., 2019), yet often absent of any consideration of the
varying nature of adversity experiences. Time is a critical consideration for the science of team resilience because inferences regarding emergent resilience can be made only within the context of a system’s trajectory of functioning in response to adversity (Gucciardi et al., 2018). Although elements of duration dominated the discussion of adversities here, we cannot ignore the importance of features related to the frequency, timing, and sequencing of events that represent heightened risk or vulnerability for advancing knowledge on team resilience emergence (e.g., see Aguinis & Bakker, 2020).

**Temporal analysis.** Consistencies across time were evident regarding the shared nature of adversity experiences and the persistence of uncertainty across the training context. Exposure to shared adversities and the withholding of task-relevant information resembled core strategies utilised by training staff to challenge teams over both training courses. Despite consistencies across the training courses, unique challenges were also faced by participants at each time point. Notably, these differences encompassed changes in the length of exposure to adversity and the sources of adversity. Although chronic exposure to adversity was common among participants’ reflections over both time points, repeated bouts of acute challenges were discussed primarily at time point two in contrast to the ongoing nature of adversity most prominent at time point one. Specifically, the repeated pressure to acquire and demonstrate complex team skills was commonly discussed at time point two in comparison to the continued physical challenges prominent at time point one.

All the [simulated] close quarter battles. So, it’s instantaneous decisions that need to be made, and those decisions essentially do mean life and death when you’re doing a [mission]… So knowing the complexity [the challenges include] introducing all these skills, more enemy. [Time point 2]

These individual variances are reflective of the changes in nature of tasks conducted across the two time points and demonstrate an important contextual factor of this study.
Second, although discussed at time point one, participants reported ‘pressure to perform’ as most prevalent following the second training course. The second time point represented a point after a training course within the latter stages of the 18-month training program, where personnel were subjected to numerous assessments and more complex training drills. These factors likely placed added emphasis upon participants’ awareness of the need to maintain individual and team performance to pass the course. Collectively, these temporal nuances underscore the importance of appreciating context when making inferences regarding the nature of adversity experiences for team resilience emergence.

Variation in the perceived controllability of adversity also occurred between the two time points. Participants commonly discussed adversities to be controllable following the initial training course, yet when discussing adversity following the second training course responses were notably absent of the controllable nature of adverse events.

We’ve got measures to control it [an adversity] so it doesn’t come out of control or become an issue, or what others deem as an adversity, you kind of just react so it doesn’t become a problem [Time point 1].

Although participants did not explicitly discuss the uncontrollable nature of adversity within the second phase of data collection, the absence of data between time points has been noted as an important signal of variation in perceptions within longitudinal analyses (Saldaña, 2003). Coupled with perceptions of enhanced task complexity and pressure to perform, these findings point to the progressive difficulty between the two courses.

Finally, participants’ discourse changed when describing the nature of dynamic team challenges, wherein initial challenges of alterations in composition (e.g., loss/removal of team member) transitioned to observations of the deleterious effects of weaker team members on team functioning (e.g., mistakes or inability of individuals):
Having members in the patrol who were just not up to standard. And I found that it was actually a big burden on our team to carry them through run-throughs and scenarios and pick up the slack where they were falling off. It made people more aware, they had to be more aware, they had to be more focused, more switched on. They had to think not just about their role but what that person’s doing also. [Time point 2]

This transition in discussion points is seemingly indicative of the more homogeneous nature of the participant cohort who remained on course at time point two. Diversity across deep level characteristics such as personality and ability can potentially disrupt group dynamics (e.g., intragroup conflict: Harrison et al., 2002); our findings support an interpretation of the beneficial nature of uniformity between team members in the current performance domain.

**Individuals recognise adversity through physiological and/or behavioural states**

Scholars have discussed the importance of recognising adversity as a key mediator (Edson, 2012) or trigger (Gucciardi et al., 2018) of team resilience emergence. Participants echoed this sentiment; they discussed three key indicators of adversity outlined below and the importance of recognising such indicators to optimise effective functioning in the face of these experiences. Collectively, these discussions indicated that individuals recognise adversity through physiological and/or behavioural states, depending on the nature of the adversity or the situation in which they are embedded.

A team’s trajectory of functioning in relation to contextualised criteria represents the core marker of team performance (Salas et al., 2008). Participants referenced an awareness of threats to, or deviations in, collective performance because of adversity. The following participant’s quote reflects an awareness of change in the progress towards the collective ‘end state’ or objective:

…everyone would be able to identify once we’ve deviated off that path of getting the quickest way to reach the end state, essentially, and I think no matter what we do, we can all pretty much identify once it’s either slowing us down getting that end state, or it’s becoming for us, not the most favourable path essentially. [Time point 1]
Identifying deviation from the desired team end state within the context of adversity exposure resembles the concept of situation awareness. Situation awareness reflects one’s degree of understanding of the dynamics of external environments produced by mental processes including perception, memory, attention, and expectation, and the use of this information for current and future goal directed action (Endsley, 1995). Individual situation awareness involves the perception of environmental dynamics, comprehension of these dynamics, and projection of this knowledge for future action (Endsley, 2015). Situation awareness is positively associated with performance on a range of tasks such as military planning (Salmon et al., 2009), simulated in-flight emergencies (Prince et al., 2007), and crash-avoidance in driving simulations (Gugerty, 1997). However, for complex systems, such as teams, unique insights regarding environmental dynamics need to be distributed compatibly among members for effective performance (Stanton et al., 2006, 2017). Deviations from expected team functioning represented a shared metric in this regard, alongside other cues discussed below.

Individual recognition of adversity also related to internal stimuli. Participants discussed an awareness of their own physiological state in response to adversities experienced as a team, such as an enhanced level of activation when “you can feel when your heart rate's going up” or “heart literally beating through your chest”. Physiological states provide important knowledge about environmental demands, particularly during stressful situations (Appelhans & Luecken, 2006; Dickerson & Kemeny, 2004), which is an important first aspect of situation awareness (Endsley, 2015). People’s interpretations of physiological states provide an important window into efficacy beliefs, particularly in situations where physical demands are high and critical to task execution (Bandura, 1997). Participants also paid attention to the recognition of adversity
experiences via their teammates’ behaviour, primarily with reference to changes in typical
behaviour or persona:

I guess you can know from their personality, if they're normally quite banterous. And if
they're not, they're probably struggling a bit. I mean you hear everyone laughing,
everyone starts losing it and wants a part of it, if that person doesn't you can sort of be
like, yeah, they're either behind or struggling and they need help. [Time point 1]

Contrasting these two themes suggests that indicators of stress experiences observed in
others (i.e., deviations from normative behaviour) were largely incongruent with self-referenced
markers (i.e., physiological states). Collectively, these points highlight that threats to team
functioning are identified across individual and collective levels. The extent to which each type
of indicator is most relevant likely depends on the degree of interdependence among team
members; collective indicators are likely prioritised when interdependence is high, whereas
individual markers would likely take precedence when interdependence is low (Kozlowski &
Ilgen, 2006).

Temporal analysis. The temporal analysis supported consistency in the recognition of
changes in team member behaviours or team level functioning across both time points.
Participants provided less emphasis upon the value of recognising changes in internal states
within the second wave of data collection. The limited discussion regarding the importance of
individual-level indicators of adversity following the second course was coupled with an
emphasis of recognising adversity in team member behaviours and collective functioning:

You could see them not wanting to be at the front, not wanting to lead, not wanting to go
through the door first, not wanting to take that shot. They kind of try and sink to the back.
It was noticeable who was always at the back and who was always at the front during the
run throughs. And I think that's probably the key indicator where you can tell on the team
who the people were that were either stressed out, nervous, when they were performing,
and that was the probably the key indicator. [Time point 2]
Given the variance of specific tasks and adversities experienced across the two courses, this finding highlights the centrality of recognising adversity via external states as a key feature of team resilience emergence that may generalise across time and contexts.

Social resources bind together individual self-regulatory capacities when confronted with adversity to support team functioning

Once an adversity and its risks are identified, teams need to leverage resources that can buffer the potential effects of these adversities. Consistent with past work (Bowers et al., 2017; Gucciardi et al., 2018; Hartmann et al., 2020; Hartwig et al., 2020), the knowledge, skills, abilities, and other characteristics (KSAOs) individual members bring with them to the situation were considered key in this regard (Ployhart et al., 2014). For our participants, emotional and cognitive abilities as well as technical skills were key to task performance when confronted with adversity.

Applying self-regulatory skills to maintain individual role performance under experiences of adversity was considered key to team resilience emergence in this context. Participants drew upon the importance of skills that allow them to regulate their emotional and cognitive states to maintain effective and efficient functioning, such as maintaining focus in response to the challenge of receiving negative group feedback:

The ability to refocus has got to be pretty good. Day to day you're getting very positive and negative feedback. If you get some negative feedback, you've got to be able to take it on board and still get on with it and perform at a high level. If you don't, you put it on your team, you're just going to keep slipping down a slippery slope. [Time point 2]

Participants also discussed more broadly the importance of past experiences applying self-regulatory skills successfully within the context of a variety of adversities as an important individual characteristic. This discussion point is unsurprising, as mastery experiences are a key source of efficacy beliefs (Bandura, 1997). Participants alluded to these benefits in terms of “past
experience applying revision techniques” and the importance of successful experiences applying regulatory skills during challenging times on the course:

You might just get the revision techniques and you apply it better, now that we've used it and we have experience with stressors along selection. Definitely. I think, naturally you just need to be able to control yourself in situations like that. Some dudes just break and we're a group of dudes that have proven it and that’s why we're here. [Time point 2]

Meta-analytic research supports the importance of psychosocial skills for human performance (Brown & Fletcher, 2017). For team resilience emergence, it is essential that individuals can access human capital resources that are relevant for collective functioning and apply them effectively when confronted with adversity (Gucciardi et al., 2018). Although certain characteristics (e.g., conscientiousness; Bell et al., 2018) may be broadly beneficial to team functioning, context shapes the importance of individual human capital resources on collective functioning. Self-regulatory skills, which have been trialled and refined via past experiences of adversity, represent an important human capital resource within the context of team resilience emergence in newly formed military teams. When individuals poorly self-regulate there is an increased risk of spill-over effects to collective functioning (e.g., emotional contagion).

Individual self-regulatory skills are essential for dealing with stressors and adversities regarding one’s own task performance. Yet within the context of teams, there also is a need for regulation of the collective, particularly regarding the social dynamics. Participants acknowledged the complementary nature of these non-technical resources because they provide the ‘social glue’ that pulls together individual members in a united front (Kwon & Adler, 2014).

Non-technical resources have been defined as the cognitive, social, and personal resources that support effective team functioning and complement individual technical skills (e.g., weapon operation; Flin et al., 2008). Consistent with previous work on team resilience in sport teams (Morgan et al., 2013), participants made specific reference to the benefit of social support outside
of the immediate performance environment (see Figure 1). Non-technical resources have been highlighted as beneficial to teams in dealing with adverse events through the reduction of the occurrence of team errors (McCulloch et al., 2009), particularly where team membership may be in its early stages (Flin & Maran, 2004).

**Temporal analysis.** Participants placed approximately equal emphasis on the importance of self-regulatory skills and non-technical resources across both time points, yet the nature of discussion surrounding the importance of non-technical resources reflected a more refined understanding with time. Essentially, participants emphasised the importance of displaying prosocial characteristics following their first training course but with subsequent experience referenced the limited nature of such characteristics when faced with adversity. For example, team members would demonstrate less prosocial behaviours toward members of the team when they felt their performance levels had dropped past a certain point. These findings indicate the adaptive nature of teams to find ways to protect collective functioning based upon compositional features of the team, such as abandoning prosocial characteristics when faced with adversity. The limits of prosocial characteristics were considered in relation to shared constructs such as interpersonal trust or team pride. One participant discussed how trust between team members would protect the importance of prosocial characteristics on a team’s approach to optimise collective functioning:

> If the team trusts them, and it’s just a bad day or a bad run through, possibly even a bad week, then they’ll get ‘don’t worry about it’ and you’ll do anything to help them get off that slippery slope – to get back up to the standard. But it’s just depending on when that trust runs out, that’s when the team might possible leave you by the wayside. [Time point 2]

These findings indicate the maturing perspectives of participants by highlighting the added complexity regarding how teams might actively protect collective functioning. The varying
importance of team members’ prosocial characteristics according to individual (e.g., performance ability) and collective (e.g., trust) features offers unique insight into the numerous ways by which resilience may emerge within complex systems.  

**Shared experiences of adversity and collective structures strengthen social bonds and mental models needed for team resilience emergence**

When describing the importance of team-level factors that underpin team resilience emergence, participants spoke to the benefit of shared past experiences and team structural factors (e.g., shared leadership) to support the development of social constructs (e.g., team identity) and the coordination of behaviours during experiences of adversity. Thus, this theme reflects an identification of initial conditions of a system based upon prior experiences of adversity and organisational norms that increase the likelihood of resilient outcomes (Hackman, 2012). Within the context of newly formed teams, scholarly perspectives of team development have changed from one of gradual movement across stages (Tuckman, 1965) to the belief that teams form certain capacities shortly after formation, which hold a strong influence over group dynamics up to an approximate midpoint of team performance (Gersick, 1988). Accordingly, this theme is characterised by specific social and structural factors of a team that support team resilience emergence from the individual level KSAOs of group members.  

A key discussion point regarding the initial conditions of the team related to the importance of past shared experiences of adversity during the early stages of team formation and development. These shared experiences seemed to foster feelings of togetherness, shared confidence, and identity, such as benefits for team cohesion that resulted from challenges of performing in adverse environments:

Yeah, so there's definitely times where you're freezing your nuts off. And you're hugging each other's backs and that sort of thing. That's a key thing. And that's on selection as
well, breaking through that physical barrier. And actually pushing yourself into somebody else's back to warm them, to warm you, that's something [Time point 1]

When considered in conjunction with the shared nature of adversity experiences, it is likely early opportunities for social exchanges as a collective provided a basis from which to foster a sense of “us” and “we” rather than “I” and “me” (Bastian et al., 2018). Such social identities are integral for people’s cognitive and behavioural engagement with stressors, particularly in group settings where they can prompt collective efforts (Haslam & Van Dick, 2011) and as protective factors for team resilience (Morgan et al., 2013, 2015, 2019). Participants also outlined the importance of these experiences in fostering a team’s shared confidence for future performance:

I personally think it brings everyone way tighter. You draw on those past adversities, like, we've all done it. I know we've all been in s**t spots and brought each other out of it, we're all still here. In my head it makes me think that we can do anything that we can put our heads to. Yeah, it gives you that confidence like [name removed] said, yeah. We did that, so I've got confidence that we could do something bigger. [Time point 1]

The perceived importance of emergent team confidence aligns well with experimental work that has demonstrated its positive effects on collective performance (Fransen et al., 2017). The structural components of teams were also discussed within participants’ discussions of factors that promote team resilience. A shared leadership structure, clear but flexible team roles, and the presence of detailed contingency plans were commonly mentioned. Participants described the importance of shared leadership abilities within the team to support problem solving in the face of challenges:

Being a leader of the group doesn't also allow everyone else here to also slack off and just wait to be told what to do. Everyone here, how we overcome stuff is everyone here shows that initiative and ability. They've kind of already switched on as to what's coming in so they can start doing that work for the group, sort of setting the conditions for everything; you sort of solve it yourself, pretty simply before the leader actually needs to give out information. So that's where we work really well together. [Time point 1]
This emphasis on shared leadership is consistent with past research on team resilience in sport (Morgan et al., 2015, 2019) and research that has demonstrated the superiority of horizontal forms over traditional hierarchical or vertical structures (D’Innocenzo et al., 2014; Nicolaides et al., 2014). The presence of role clarity was another prominent discussion point. Within a military context, standard operating procedures guide the structure and nature of such roles. The criticality of these roles and the collective’s awareness of them was captured clearly in a participant’s reflection of an adversity characterised by failure in communication equipment:

I think the same thing. Before we step off, everyone knows their job without comms [communication channels] and actions on without comms. Everyone sort of knows there's a certain amount of time or whatever. If you don't have comms, then everyone knows the plan they need to execute from there, where we can all marry back up again to find out what the f*** has gone wrong with the comms, or find out who's good or what's good. Even with this is happening, I know what to do from here now. [Time point 1]

Standard operating procedures that include clear definitions and knowledge of key roles and tasks are essential for distributing situation awareness across individual components of complex systems such as a team, particularly when the collective has limited or no past experiences working together (Stanton et al., 2006, 2017).

Temporal analysis. The temporal examination of this theme revealed nuances in role adherence, such that the importance of this factor was pervasive across time points, yet the nature of the theme was discussed differently at each wave. For example, perceptions changed from one of ‘knowing your role’ to one where participants underscored the benefit of flexibility to switch across such roles, highlighting an important adaptive process of the team. Team knowledge structures have been proposed as effective in supporting adaptive processes of teams (Christian et al., 2017). Shared mental models, which reflect convergent maps of the task environment that enable individuals to explain and predict their surroundings (McComb, 2008), were discussed by participants across time points. Participants initially spoke to a collective team
knowledge that reflected “everyone acting on the same idea” and having a shared understanding of the “end state” during adversity. However, the discussion on these shared mental models evolved to resemble an understanding of teammates’ strengths and weaknesses, and the prediction of teammates’ behaviours throughout adversity three months later. Although team members were grouped into small teams, this evolution in shared mental models is likely a product of the knowledge participants developed of the entire trainee cohort over time. Within the context of this study, these changes represent the development of a team’s shared mental model from solely an accurate understanding of task constraints towards the additional knowledge of the future needs and actions of other team members (Mohammed et al., 2017). This finding is consistent with work on team cognition, particularly the translation of such knowledge structures into action via interactive team behaviours (i.e., interactive team cognition; Cooke, 2015).

**Behavioural processes and shared states are how collectives turn individual and team capacities into performance under adversity**

Scholars have highlighted several mediating factors or mechanisms by which emergent team resilience unfolds over time (Bowers et al., 2017; Gucciardi et al., 2018). In essence, the shared meaning of this theme reflects the enactment of interdependent actions and the salience of shared states as the primary means by which teams utilise their individual level capacities to sustain or quickly recover performance in response to heightened risk or vulnerability, that is, demonstrate emergent team resilience. Participants spoke to the importance of leadership behaviours in coordinating the actions of team members when faced with adversity. A key behaviour in response to adversity is one where leaders make quick and effective decisions and communicate this information to the team:
Being able to make that absolute decision then, rather than trying to wait or trying to figure out what a 100% decision is. Just making a decision and sticking to that decision, making that work. Rather than pausing, waiting and spending too much time trying to figure out what the optimal solution is, because there probably isn't one. You just need to make a decision and then make that decision work. [Time point 2]

Participants also discussed the leader’s coordination of the affective state of team members, particularly for regulating team members’ activation levels. Perhaps most characteristic of the discussions, leaders who demonstrated calm actions were identified as ‘infectious’ upon others:

Yeah, definitely someone that's calm and can coordinate a situation is obviously infectious as well. Like, s**t hits the fan and everyone's freaking out then it's just infectious as well. So someone that's calm and collected can coordinate, sort of step up, whether they're in a leadership position or not. But yeah, calm and collected and being able to coordinate a small group, it's definitely important. [Time point 1]

Several other behavioural processes between individual members were used as strategies to facilitate the emergence of shared affective states across the team. Most notably, participants commonly referred to the use of humour about the prospect or direct experience of adversity as a means by which to foster positive affective states within the group and support sustained high performance (see also, Morgan et al., 2013, 2015). Aligned with a social identity perspective (Haslam & Van Dick, 2011), one participant indicated how joking between team members following the experience of challenge was representative of their team and a ‘signature’ coping strategy adopted by the group:

And the biggest thing that would help us as a group would be comedy amongst us. We take the piss out of each other, hard. If you're an outsider and you see the things we say to each other, you'd be like, "Oh, they don't like each other." That's a big part of how we deal with stuff. [Time point 1]

Humour represents an effective self-regulatory strategy by which to manage one’s experience with stress and maximise performance (Mesmer-Magnus et al., 2012), including military team resilience (Temby & Vozzo, 2017). From a cognitive standpoint, humour fosters perceptions of controllability and adaptive appraisals of stress (e.g., seeing the positive or challenging side to a
situation; Martin et al., 2003). Humour also enables people to release pent-up energy and thereby effectively manage their emotional responses to stress, which can be transmitted to their peers (Robert & Wilbanks, 2012). Socially, humour serves as an important ‘social lubricant’, whereby it fosters and sustains quality relationships with co-workers and maximises knowledge of each other (Holmes, 2000), which in turn increases opportunities for social support (Moran & Hughes, 2006). Acting upon these opportunities for social support was also outlined by participants as a key team process. Participants discussed how proactive cooperative behaviours that lightened the workload or experience of adversity within team members was a crucial process (e.g., voluntary rotating of task roles):

Constantly looking for work and filling the gaps so we talked a lot about ownership or initiative so that you expect people to be looking for what needs to be done and then to go and do it. We can’t as team members be thinking "Oh this needs to be done, you got to do that." It's happening too quickly. So expect that out of your teammates that they're looking to help you out. [Time point 2]

Shared states were discussed as a means by which to complement these interdependent behavioural processes. Participants referred to the beneficial nature of states such as shared trust between team members when performing within the context of adversity as protective factors that limit the experiences of stress across team members. Participants also spoke to the importance of trust in supporting teammates, with one candidate referring to this trust in allowing him to focus on his own individual coping strategies (e.g., combat breathing):

And that's that trust as well, so you know that if s**t does hit the fan, you don't have to stress through the roof because your mates are doing their job, you can do yours. You're on task, off task, helping each other out. It gets you through that stressor and then you can do your combat breathing, whatever helps you. [Time point 1]

Although there is ongoing debate regarding a universally accepted definition, team trust refers broadly to “generalized expectations of trustworthiness and the willingness to accept vulnerability to all members” (Costa et al., 2018, p. 171). Team trust is a positive predictor of
team performance, even after controlling for important covariates (e.g., trust in leader, past team performance), yet is contingent upon the degree of task interdependence, authority differentiation, and skill differentiation (De Jong et al., 2016). Nevertheless, as a dynamic concept itself, the degree and nature of the team trust-performance link may differ according to temporal and contextual elements (e.g., initial level of team trust at formation, time lag; Feitosa et al., 2020).

**Temporal analysis.** Participants predominantly discussed the importance of supportive coping behaviours (e.g., sharing the workload of a teammate experiencing challenge), humorous interactions, leadership behaviours, and the presence of trust between teammates at the initial interview. At time point two, participants paid greater attention to the relevance of shared states of cohesion and confidence between team members but remained consistent in expressing the importance of effective leadership behaviours to coordinate group members. The discussion surrounding the use of humour as a behavioural process is potentially reflective of the nature of adversities experienced at time point one, where participants referred predominantly to the chronic nature of adversity exposure experienced at time point one. The ‘relief’ utility of humour to displace ongoing suffering (Godfrey, 2016) points to the potential benefit of humour to cope with prolonged adversity exposure. This potential link between the behavioural processes surrounding the use of humour and chronic adversity exposure reinforces the need to consider the nature of adversity when exploring key resilience factors. This finding was mirrored by the predominant discussion of planning and reflection activities following the extended challenges experienced within the initial training course and less so when faced with the more frequently occurring and complex challenges in the latter phases.
Cohesiveness and collective efficacy were discussed more prominently within the second wave of interviews. For example, one individual described how “everyone has more confidence now being able to work with the people [who] are left”. The absence of discussion at the initial stage of interviews may reflect the need for time spent as a group to foster their emergence, or at least appreciate their significance for the team, rather than a change in the net worth of these shared states. Collective efficacy, for example, is most influential upon team functioning after several weeks because of prior teamwork behaviours (Tasa et al., 2007). As previously mentioned, the importance of interactions between the members of the entire cohort between training activities would have acted to foster emergence of shared states, and points to the potential links between early team coping behaviours and protective emergent states. Certain interactive coping strategies enacted within the initial experiences of performing in a new team may have served as inputs to the development of collective states that further act as protective factors within the second training course (e.g., humour fostering social cohesion: Godfrey, 2016). Such a perspective is consistent with the conceptualisation of resilience factors as dynamic network models, whereby one resilience factor may be ‘activated’ by another resilience factor (Kalisch et al., 2019).

**Theoretical Implications**

Our study provides a contextually and temporally rich description and interpretation of team resilience emergence that sheds light on the interplay between the conceptual building blocks and how they unfold over time within the context of high-stakes military training characterised by substantial demands and challenges spanning several months. In so doing, the results of this study offer two key theoretical contributions to the literature on team resilience.
First, our thematic integration and interpretation of military personnel’s perspectives support key elements of our guiding conceptual model of team resilience emergence. In terms of theoretically-informed elements, we revealed support for the centrality of adversity experiences as triggers for emergence processes (Gucciardi et al., 2018; Stoverink et al., 2020); individual human capital resources (Gucciardi et al., 2018), situation awareness (Gomes et al., 2014; Gucciardi et al., 2018), team-level factors and states including leadership, team identity (Gucciardi et al., 2018; Morgan et al., 2013), and shared mental models (Gucciardi et al., 2018; Morgan et al., 2019; Stoverink et al., 2020) as key drivers of the emergence process and outcomes; and behavioural, cognitive, and affective (i.e., humour, trust) coordination among members in translating capacities into high-performance when confronted with stressors or adversities. We uncovered links between specific characteristics of adversities and the coping mechanisms adopted in such circumstances, such as the use of humour to handle chronic stressors. We also illustrated how task constraints play a role in shaping the coping mechanisms adopted by newly formed teams. For example, performing repeated complex activities precluded the use of planning and reflection regulatory strategies. Considered collectively, these data connect conceptual perspectives with the dynamic realities of newly formed military teams’ engagement with stressors and adversities in ways that shine a spotlight on potential conceptual refinements to the phenomenon of team resilience emergence.

Second, our contextually and temporally rich exposition of adversity experiences over time provides new insights into the nature and range of adversities common within this context. These insights illustrated how shared adversities can arise from either shared experiences or the ‘catching’ of experiences from others, and the more debilitating effect of chronic stressors upon team functioning. This contribution is important for the science of team resilience because
adversity is a necessary condition that must be present for conceptually and empirically robust
operationalisations of the emergence process and outcomes; in the absence of knowledge of the
adversity experience that has triggered the emergence process, we are unable to answer the
question “resilience to what”. Adversities are characterised by elements relating to valence,
impact, predictability, challenge, emotional significance, change in world views, social status
changes, external control, and extraordinariness (Luhmann et al., 2020). Our findings
underscored the centrality of the nature of sharedness for characterising adversity experiences
within the context of organisational teams and the team resilience emergence process. Whether
an adversity is experienced simultaneously among all members or is progressively transferred
from one or some members to others has important implications for the emergence process and
outcomes (e.g., contagion). These implications include the immediacy of disturbances to team
functioning, and the ostensible nature of adversity to team members that would dictate the
tailoring of reactive coping strategies (e.g., whole team vs sub-section responses). Thus, our
findings underscore conceptual and practical nuances regarding the temporal elements of
adversity experiences that are largely absent from past work on team resilience (for a review of
multilevel stressor research in teams, see Razinskas & Hoegl, 2020). Extending beyond the
science of team resilience, our work underscores the need to broaden conceptual perspectives of
major life events to encompass elements related to the social nature of such experiences, which
are absent from existing perspectives and taxonomies (Luhmann et al., 2020).

**Strengths, Limitations, and Future Directions**

We have described a contextually and temporally rich investigation of newly formed
teams undergoing high-stakes military training characterised by numerous stressors and
adversities. Future work may look to leverage and extend these findings, particularly regarding
the conceptual and methodological limitations of our work. For example, our reliance on retrospective interviews could be strengthened via data-prompted discussions that leverage stimuli from in situ experiences with major stressors or adversities (e.g., biofeedback). Relatedly, the absence of metrics to characterise trajectories of collective functioning over time within the context of adversity means we are unable to appreciate fully the degree to which teams demonstrated emergent team resilience, other than a crude assessment of successful progression through the course. For example, there may be important nuances in the perspectives and experiences of teams who demonstrate varying degrees and/or types of emergent team resilience. Finally, we acknowledge there is a need to consider the complexities of team resilience emergence within multi-team systems (Shuffler & Carter, 2018) including work contexts where the stakes are low and adversities are less frequent, yet team functioning remains critical to work success.

Conclusion

Scholarly interest in the phenomenon of team resilience emergence is on the rise (Bowers et al., 2017; Hartmann et al., 2020; Hartwig et al., 2020; Stoverink et al., 2020). We retrospectively examined the perceptions of team resilience emergence of newly formed military teams following two training courses across a 4-5 month period within the context of an 18-month long training program, and provided insight into temporal dynamics of these perceptions of team resilience over the early stages of team development. We constructed the essence of participants’ discussions across five broad themes and considered their temporal elements across the two waves (see Figure 2). Collectively, these data broadly support the conceptualisation of team resilience emergence that informed this work (Gucciardi et al., 2018), and provide a
meaningful basis for scholars to consider when interpreting and exploring conceptual perspectives of team resilience emergence within future empirical studies.


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Figure 1. Conceptual model of team resilience emergence including key propositions (adapted from Gucciardi et al., 2018).
Figure 2. Overview of cross-sectional and longitudinal theme structure with representative quotes.
Interview Guide

Interviewer: Thanks for taking the time out for your course to sit down with us to share your perceptions of team resilience as it has unfolded over the first half of your training program/since we last spoke. By team resilience, we mean sustaining optimal levels of collective functioning or recovering quickly after some degree of deterioration when confronted with adversity. In other words, we’re interested in the trajectories of team performance before, during, and after a team has experienced some type of adversity. By adversity, we mean an event or situation that posed substantial threat to the collective functioning of your patrol. The adversity might be something that was experienced directly by one member only, like an injury – yet has the potential to affect the functioning of the team. Or, the adversity could be something that the team as a whole experienced simultaneously, like equipment failure that disrupts communication channels between members.

Setting the Scene

1. Can you describe for me an adversity that your patrol has experienced so far on the training program/since we last spoke?
   a. Is the experience the same or different for each team member? How so?
2. How did you as an individual / team know there was a substantial threat to the optimal functioning of your team? [Probes: what did you see, hear, etc? How did the situation change?]
3. How well did your patrol deal with this adversity? [Probe: ask them to focus on the objective of the mission – did your patrol sustain performance or deteriorate in some way but bounce back quickly?]
4. What factors do you believe played a key role in your patrol sustaining performance / bouncing back quickly? [Note: refer to the performance trajectory noted in response to Q3]
5. What did you learn from this experience with adversity that will help you as an individual working in teams in the future / your team’s future experiences with adversity?

Interviewer: Thanks for your insights so far. You may have noticed some repetition in the surveys you have completed for us. These surveys focus on several key factors that we believe play an important role in team resilience. In the following section of the discussion, we want to gather your perspectives on these factors.

Shine a Spotlight on the Guiding Conceptual Model of Team Resilience

6. How did your patrol make use of the knowledge, skills, and attributes of individual members to deal with the adversity?
7. Was the adversity something your patrol expected to occur, or was it unexpected? [Probe: in other words, did you consider the adversity as part of your planning?]
   a. If the adversity was expected => how did you plan in advance to deal with that adversity? Did these plans align with what you actually did?
   b. If the adversity was unexpected => did your patrol reflect on the adversity experience at some point to gather learning points?
8. Coordination among team members is critical in any sort of group-based activity. How well did your patrol coordinate in response to the adversity? [Probe: behaviourally, cognitively, emotionally – which type(s) were most important?]
9. With teams, norms represent how members are expected to think and act. To what extent did norms play a role in your patrol’s response to the adversity?
10. How did leadership play a role in your patrol’s response to the adversity? [Probe: what did he do, say, etc?]
11. There is a classic saying, “great minds think alike”, which is super important for team performance. To what extent did each member’s knowledge of the situation and task at hand align with other members? [Probe: how did this degree of overlap affect your performance?]
12. Has your team’s experience with this adversity affected your belief in your patrol’s ability to deal effectively with future adversities? How so?

**Looking Forward**

13. What do you expect will be the main adversities that you will experience on [name of major course blinded because it will identify the participant sample]? [Probe: you might consider adversities that are experienced directly one member, some but not all, or the entire team]
   a. [if time permits] How might your patrol go about dealing with these adversities?

**Ending Question**

14. Is there something we haven’t asked you that believe is relevant to team resilience?

**Interviewer:** Thank the participants for their time and sharing their perspectives of these questions.