

Conceptualizing Risk and Unit Resilience in a Military Contextⁱ

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Unit/team resilience in the U.S. Army

The United States Army Research Institute for the Behavioral and Social Sciences (ARI) is a leading agency of the Army that conducts innovative and applied research aimed at improving Army readiness and performance. The agency accomplishes its mission in part by developing innovative measures and methods to address these issues and improve the overall Soldier lifecycle and lethality.

Fostering and ensuring resilience at the individual Soldier, unit, and organizational level may help leaders and Soldiers improve Soldier lethality. However, much of the scientific research on resilience has focused on defining and measuring resilience at the individual level, with less investigation of unit or team-level resilience. With the critical role of teams and small units in the Army, it is essential to have a theoretically supported definition of unit resilience as well as develop an empirically sound, evidenced-based measure to help determine its impact. To date, no agreed upon definition of unit resilience exists. In a recent effort (Cato, & Blue, 2017; Cato, Blue, & Boyle, 2018), we reviewed the collective (e.g., group, organization, community) resilience literature and identified recurrent themes across definitions of collective resilience. Themes such as absorption, withstanding, adapting, and bouncing back occurred numerous times across the collective resilience definitions examined in our literature review (Cato & Blue, 2017; Cato et al., 2018). Other concepts that appeared in the definitions and descriptions of multiple collective types of resilience included preparing/anticipating, learning, and growing/thriving. Based upon the above themes, we defined Unit Resilience as:

*“A multi-phasic process in which members of the unit deliberately and collectively apply skills, abilities, and resources to **prepare** the unit for adversity by planning and anticipating adverse events, successfully **respond** to challenging events by withstanding or adapting to stressors, and **recover** after the event, which involves the unit returning to homeostasis (e.g., bouncing back) or an improved state through post-event learning and growth.”* (see Cato et al., 2018)

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This definition focuses on a unit's ability to prepare, respond, and recover from adverse events and is consistent with other collective resilience definitions (see Alliger, Cerasoli, Tannenbaum, & Vessey, 2015; Bergstrom & Dekker, 2014; Linkov, Eisenberg, Bates et al., 2013; National Resource Council [National Academies of Science], 2012; Linkov et al., 2018). Our definition also embeds risk and threat as an inherent part of the overall collective resilience process that units must address in the preparation phase of unit resilience (Linkov & Trump, 2019). Moreover, our unit resilience definition acknowledges the role that Soldiers' skills and abilities as well as individual and unit resources play to enable a unit's successful progression through the three distinct unit resilience phases. The extent to which these skills, abilities, and resources are utilized or are damaged or depleted can positively or negatively impact a unit's resilience. Such a perspective is consistent with the Systems theory (see Bergstrom & Decker, 2014) and Conservation of Resources (COR) theory (Hobfoll, 1989; McCubbin & McCubbin, 1988).

From a systems theory perspective, we view the military unit or team as a system, with the collective resilience of the system being bolstered or hampered by the individuals who comprise the system. While one member in the system may not necessarily demonstrate resilience or behave in a resilient manner, the collective can still demonstrate resilience and overcome individual shortcomings. COR theory provides a resource-focused model that emphasizes how the impact of repeated stressors depletes resources availability. From these perspectives, we view the military unit as a complex system in which resources can be tapped individually or collectively. Over- or underutilization of resources within the system can negatively or positively impact the entire system, or Army unit. Likewise, COR theory holds that failure to allow resource regeneration within the system will overtax the system and result in adverse outcomes. These theories offer a promising perspective to advance our understanding of unit resilience. ARI, with contracted support, is using this literature-based, theory-informed definition of unit resilience to help inform the development and future validation of a unit resilience measure appropriate for use in the Army.

Unit resilience strategies should be developed to help Army units better prepare for, respond to, and recover from adverse or challenging events. Such strategies should focus on individual and collective skill building within the unit along with determining appropriate and timely resource allocation.

A unit resilience approach that includes risk assessment and management

For military populations such as the Army, articulating what risk and resilience are, as well as how each manifest, is important. Risk is an inherent part of most Soldiers' experiences in the Army. Risks that Soldiers face both individually and collectively include a multitude of stressors or challenges in garrison and during deployment, such as repeated deployments, family separation, or loss of life or limb during peacekeeping missions or other operations. Some argue that risk and resilience are indeed different constructs (Linkov et al., 2018). However, based upon a previous literature review (Cato et al., 2018) across multiple collective types of resilience, we propose that unit resilience must focus in some part on potential risks that units face as well as various skills, abilities, and resources which enable the unit to prepare, respond (via absorbing, adapting, or flexing), and recover in the face of adverse events or significant challenges. Risks can impact the overall resilience of units. The risks or stressors that Army units face can impede the units' ability to respond rapidly or even recognize a need to respond, can limit the units' ability to absorb and withstand the impact of stressors, and can result in an overall failure to adapt or respond, which can ultimately impede or limit post-event thriving and learning from adverse events or prevent recovery altogether. Even the

most prepared unit may fail to respond and adapt when resources are depleted. Focusing on mitigating risks can potentially allow units to maintain an awareness about what resources need replenishing and when, which is likely to enable resilient responding.

Understanding which risk assessment and management options are relevant is also an important characteristic of unit resilience. Within the Army, risk is defined “as probability and severity of loss linked to hazards...[and] the measure of the expected loss from a given hazard or group of hazards, usually estimated as the combination of the likelihood (probability) and consequences (severity) of the loss” (Headquarters, Department of the Army [Army], 2014, p. 4). The Army’s risk management approach is intended to assist individuals, leaders, and Army units in making informed decisions to reduce or offset risk, and ultimately influence mission success. The Army proposes a 5-step approach to engage in risk management, where steps one and two include identifying and assessing potential impacts of the hazards (assessment) and steps three through five include developing controls and making decisions, implementing controls, and supervising and evaluating the implementation and outcomes (management) (Army, 2014, p. 3-4). Leveraging and incorporating existing Army risk assessment and management principles and techniques as part of the unit resilience process can help clarify the relationship between these two constructs and ways in which the preparatory phase of unit resilience can be measured. Based upon our literature review (Cato et al., 2018) and other work by the Homeland Security Studies & Analysis Institute (Kahan et al., 2010), we adopt an approach which views risk assessment and management as a means to help understand unit resilience and its measurement (see Figure 1).

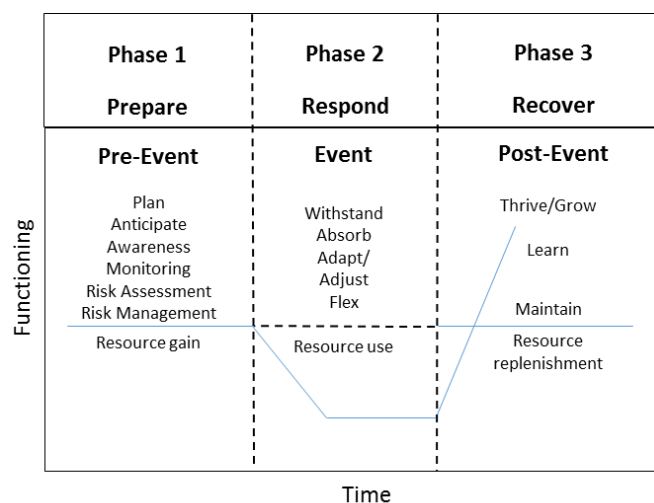


Figure 1: Unit Resilience Phases across Time and Functioning

Adapted from figures that depict resilience processes and profiles across various disciplines (Carver, 1998; Kahan, Allen & George, 2009; Linnenluecke & Griffiths, 2012; O’Leary & Ickovics, 1995)

Assessing and managing risk involves understanding the *probability* (frequency) of risks occurring and the expected *severity* (consequences) of those risks. Per DA PAM 385-30 (Army, 2014), the Army assesses probability of risk occurrence across five categories:

- Frequent (continuous/inevitable)
- Likely (several occurrences)

- Occasional (intermittent occurrences)
- Seldom (infrequent occurrence)
- Unlikely (improbable occurrence)

Likewise, risk severity is assessed across four categories:

- Catastrophic (death, unacceptable loss/damage, mission failure)
- Critical (severe injury or damage, severe degradation of mission capability)
- Moderate (minor injury or damage, minor degradation of mission capability)
- Negligible (minimal injury or damage, little or no impact on mission capability)

Based on the challenges Army units face, it is meaningful to focus on the interactions between probability and severity of potential adverse events/hazards that produce “high” or “extremely high risks.” For example, high/extremely high risks events are those that are expected to be frequent coupled with severe consequences that threaten mission success. Risk assessment and management are essential to, and embedded within, the unit resilience process and both are integral in improving the likelihood of mission success. Within our unit resilience framework proposed herein, and indicated previously, risk assessment and management occur pre-event or during Phase 1 (Prepare). This phase involves identifying, anticipating, planning and routinely monitoring conditions to pre-emptively minimize hazards or threats (see DA Pam 385-30, Army 2014, p. 3). Unit resilience Phases 2 and 3 focus on responding to an adverse event (during the event) and recovering from the event (post-event). Within these additional phases of the unit resilience process, there are vital factors that influence the ability of a unit to confront acute and chronic stressors impacting mission success. For instance, the responding phase includes withstanding and absorbing the shock, adapting, adjusting, and flexing, whereas the recovery phase includes growing, thriving, and post-event learning.

Army units might benefit more from using resilience-based approaches rather than risk-based approaches when specific risks are unknown or unexpected. Increasingly, threats and risks are pervasive issues Army units face. During deployments, it may be impossible to know all of the critical threats that a unit should prepare for, make attempts to avoid, or eliminate, given the nature of the unit’s mission. A resilience-based approach would allow Army units to focus on general resilience building skills that could then be applied when needed to various situations, particularly those with low probability but extreme impacts. Training Army units to be able to better withstand and absorb impacts, adjust, and flex under uncertainty will likely improve the unit’s ability to recover rapidly, improving the units’ overall performance and unit readiness. Utilization solely on risk-based approaches would be preferred only when events are known with critical to catastrophic impacts.

Determining whether to utilize risk management or resilience strategies requires consideration of various metrics. Monetary cost is often one the most important metrics an organization must consider. Utilizing general resilience-building strategies might be more cost-effective than risk management-focused strategies. The latter requires resources focused on the identification, evaluation, prioritization, and planning to address a variety of specific known, anticipated threats. While it is generally possible to identify critical threats that organizations typically face, it might prove to be more challenging to do so in a military setting, given that a number of challenges Soldiers and Army units face in theatre are unpredictable and sometimes unknown. Resilience-based strategies can be used in garrison and during deployment, and can be aimed at addressing both the

most critical known threats and general unknown threats or risks. These resilience strategies provide a more holistic approach and could enable resilient responding and quicker recovery regardless of the risk level. Research is needed to better understand and measure the comparative return on investment from investing in resilience-building strategies instead of or in addition to risk management strategies.

Unit resilience is worth the risk

Resilience-building might be associated with certain drawbacks or moral hazard (i.e., when individuals or an Army unit intentionally take on risks knowing that others will bear the negative consequences or impacts). In a military context such as the Army, risks inherently abound. In a variety of situations, Soldiers and Army units can do little to completely avoid such events, despite being faced with critical risks such as loss of limb or life. Resilience-building could result in several expected outcomes. Ideally, one potential outcome could be that Army units build resilience and learn to anticipate risks, respond appropriately, and recover more quickly using existing or newly garnered resources, as well as learn from their experiences. Using a resilience strategy, Soldiers would be able to better prepare for critical expected risks (and unknown risks), practice appropriate responses, develop and hone required skills and abilities, and garner resources to be ready to respond when exposed to inevitable, dangerous and adverse events. Such preparation does not necessitate incentivized risk taking, it merely means that units are potentially equipped with tools to appropriately respond should the need arise. Another potential outcome, and possible drawback, is that resilience-building could potentially bolster a units' overall confidence in their ability to handle adverse events to the point that units become overconfident, taking on risks that exceed the units' abilities and result in harm or depleted resources. Lastly, Army units may be required to engage in resilience-building skills directed by policy or processes, which could result in Army leaders believing that units that demonstrate resilience or are expected to be resilient should be tasked to take on more or longer deployments, have shorter demobilization periods, or be assigned to more dangerous locations.

Annotated bibliography

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conceptualize team resilience as a two-dimensional construct that is demonstrated through efficacious coping beliefs in the face of adversity and the capacity of a team to adapt. They posit that teams need to believe they are capable of absorbing and coping with stressors and are able to recover from those stressors.

Edson, M. C. (2012). A complex adaptive systems view of resilience in a project team. *Systems Research and Behavioral Science*, 29(5), 499-516. <http://dx.doi.org/10.1002/sres.2153>. Team resilience is defined as adaptation that supports goal achievement, learning, and planning for future challenges.

Pollock, C., Paton, D., Smith, L. M., & Violanti, J. M. (2003). Team resilience. In D. Paton, J. M. Violanti, & L. M. Smith (Eds.), *Promoting capabilities to manage post-traumatic stress: Perspective on resilience* (74-88). Springfield, IL: Charles C. Thomas Publisher. Pollock and others offer a perspective on team resilience that focuses on a team's coordinated response that allows it to adapt and experience little to no adverse impacts.

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