



# Resilience: A Multilevel Construct in the US Army



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**Abstract:** Unit resilience, defined here as a multi-phasic process in which members of the unit collectively apply their respective skills, abilities, and resources to: 1) prepare for adversity by planning and anticipating problems, 2) successfully respond to challenging events by withstanding or adapting to stressors, and 3) recover, either by returning to baseline or an improved state through learning and growth. Existing theory and research on resilience has typically focused on either individual or organizational resilience, with little consideration for team/unit resilience, or potential cross-level effects. To this end, we integrate established construct validation principles with recent advancements in multilevel theory and methodology to propose a framework to empirically establish resilience as a multilevel construct. Addressing each step in our methodology will help clarify how we conceptualize resilience, how to accurately assess resilience at the unit level, and importantly, how it relates to other constructs residing at the same or proximal levels.

## Introduction

Prior research has been inconsistent with the conceptualization and operationalization definition of resilience (see Table 1). Additionally, this research has remained at a single level of analysis, with little cross-level considerations.

Recent developments have conceptualized resilience as an emergent state<sup>1</sup>, a phenomenon that emerges at the team or unit-level, through dynamic individual-level interactions<sup>2</sup>.

The next step is to develop and validate a multilevel resilience framework to help advance this research using a consistent conceptualization.

**Table 1. Prior Team Resilience Definitions**

Author(s)	Definition
Alliger et al. (2015)	• The <i>capacity of a team</i> to withstand and overcome stressors in a manner that enables sustained performance.
Carmeli et al. (2013)	• The <i>team's belief</i> that it can absorb and cope with strain, as well as a team's capacity to cope, recover, and adjust positively to difficulties
Edson (2012)	• <i>Adaptation</i> that supports successful achievement of goals and objectives, as well as learning for future planning and preparation.
Meneghel et al. (2016)	• The <i>capacity</i> of a team to bounce back from failure, setbacks, conflicts, or any other threat to well-being
Morgan et al. (2015)	• A <i>dynamic, psychosocial process</i> which protects a group of individuals from the potential negative effect of the stressors they collectively encounter
Sharma & Sharma (2016)	• The <i>process</i> by which teams/groups bounce back and sustain in the facade of adverse conditions
Van der Beek & Schraagen (2015)	• The <i>ability</i> of the team to respond, monitor, anticipate, and learn
West et al. (2009)	• The <i>capacity</i> to bounce back from failure, setbacks, conflicts, or any other threat to well-being that the team may experience

## Method

We integrate a multilevel construct validation technique<sup>3</sup> (Table 2) with a new framework of unit resilience (Figure 1) to explicate the emergence of resilience in Army units.

Psychometric properties of responses from individual soldiers regarding their unit will be analyzed at each phase to empirically validate resilience as a multilevel construct.

- Resilience is thought to emerge from the interactions between team members and their collective ability to prepare for, respond to, and recover from stressors in a manner that enables sustained performance.

## Method (con't.)

Using a referent-shift approach, the factor structure, inter-rater reliability ( $r_{wg}$ ), inter-rater agreement (ICC(1) & (2)), and the scale reliabilities will be examined.

- $r_{wg}$ : used to provide justification to aggregate scores to unit level,  $\geq 0.70$ <sup>4</sup>
- ICC(1): within-unit variance attributable to a higher order construct<sup>5,6</sup>
- ICC(2): reliability of the higher level means<sup>5,6</sup>

**Table 2. Construct Validation Framework Steps<sup>3</sup>**

Step Name	Description
1. Definition	<ul style="list-style-type: none"> <li>• Define the construct at each relevant level of analysis</li> <li>• Determine whether the construct should be expressed as multidimensional or unidimensional</li> <li>• Determine the nature of the construct (measures of central tendency or variability)</li> </ul>
2. Method of Measurement	<ul style="list-style-type: none"> <li>• Determine the method of aggregation to best capture the construct at the team/unit level</li> </ul>
3. Psychometric Properties	<ul style="list-style-type: none"> <li>• Compare the factor structure of the measure across levels of analysis</li> <li>• Measure and examine the internal consistency across levels of analysis</li> <li>• Check to make sure there is sufficient justification for response aggregation</li> </ul>
4. Variability Between Levels	<ul style="list-style-type: none"> <li>• Check to make sure there is variability at different levels of analysis</li> </ul>
5. Function Across Levels	<ul style="list-style-type: none"> <li>• Identify antecedents, correlates, and outcomes associated with the construct across levels of analysis</li> <li>• Empirically test for similarities and dissimilarities in those relationships with the construct across different levels</li> </ul>

## Discussion

Empirically validating resilience as a multilevel construct has not been attempted in the published literature, making this framework the first to offer guidance in conducting that research.

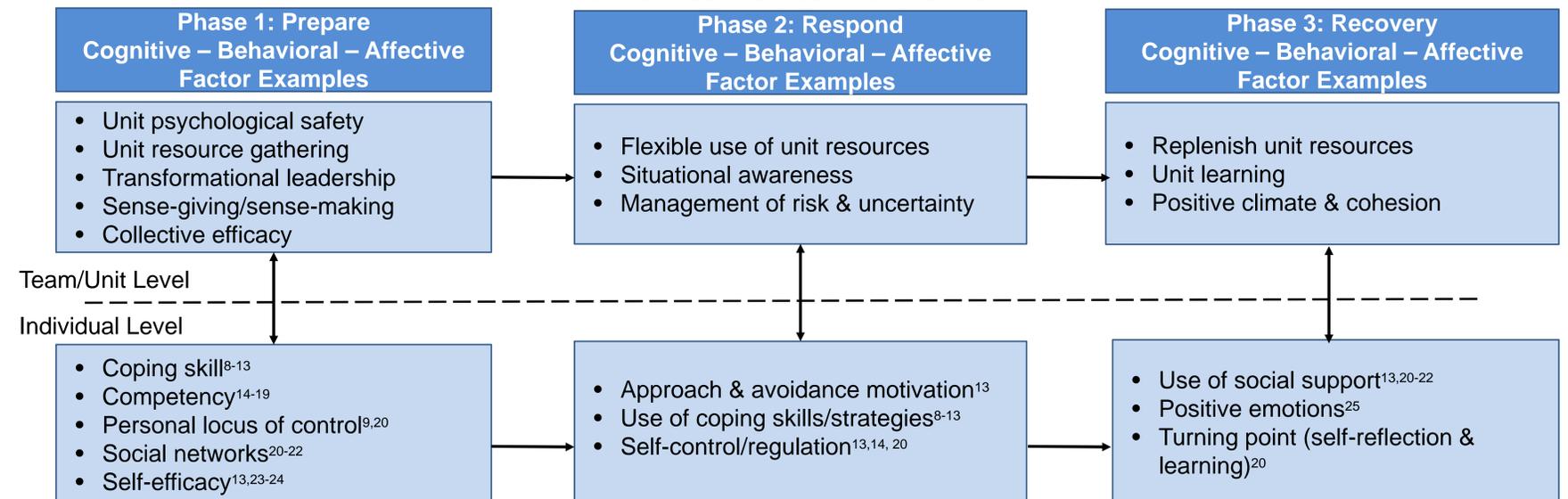
Advancing a definition of resilience at multiple levels of analysis provides researchers with a foundation on which to build future research.

- Provides a conceptualization of resilience that can be consistently applied in future research.
- Will allow for a consistent comparison of effects across research studies.

By incorporating a multilevel perspective in resilience research we account for the individual level influences on the team as well as the team influences on the individual.

- Benefits the US Army by identifying specific Soldier-level factors that can contribute to their team's resilience.
- Develops more effective, high-performing teams over time.

## Unit Resilience Framework



**Figure 1. Unit Resilience Framework**

**Note.** Team level input<sup>7</sup>

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\*indicates reference was used in a table

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