

## The Risk Of Divergence In Resilience

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*Keywords:* resilience, scientific consensus, multidisciplinary research, operationalization, ontology

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This research critically examines the state of scientific consensus in the multidisciplinary field of resilience, a topic that has attracted increasing attention across various domains due to escalating societal and ecological challenges. The diversity of definitions, perspectives, and approaches within the field has resulted in a complex landscape, making the achievement of a comprehensive consensus a challenging task. The main question we address is whether we are converging towards or diverging from a resilience consensus. We also seek to understand the specific circumstances under which convergence or divergence may be considered beneficial or counterproductive.

Knowledge convergence, or consensus, refers to the alignment of diverse information, expertise, and viewpoints to form a common understanding or agreement on a specific topic, integrating potentially conflicting or inconsistent information (Ford, 2008). Conversely, knowledge divergence occurs when emerging perspectives or understandings clash with established knowledge, potentially causing fragmentation and misinformation, yet also fostering innovation and knowledge refinement (Ford, 2008).

Investigating the progression towards convergence or divergence necessitates an understanding of the scientific consensus process (Linkov et al. 2014; Cutter et al. 2013). The process of scientific consensus is depicted in Figure 1. Initially, as the topic gains interest, new scholars emerge, and their opinions align with those of established experts, leading to an increase in scientific consensus (i.e., premature consensus). This is followed by a period of debate and opinion divergence (Shwed and Bearman 2010), leading to a critical 'pivot point' where the consensus will either continue declining (indicating divergence) or start increasing again (indicating convergence). The scientific community's efforts in research, open communication, and standardized practices heavily influence this pivot. During these phases, the formation of distinct schools of thought may occur, leading to localized convergence within a global context of divergence.

To examine the state of scientific consensus in the resilience concept, this research integrates an in-depth literature review, insights from an academic expert workshop, and an analysis of significant historical events that have shaped the resilience narrative (Dedehayir and Steinert, 2016). A notable methodological tool used is the hype cycle model, which maps the evolution of resilience as a concept. This model correlates the prominence of resilience with key developmental milestones and impactful global occurrences, such as major natural disasters and technological shifts. The research also makes a distinction between the ontological (theoretical) and operational (practical) aspects of resilience. There is a broad consensus in the ontological perspective of resilience, indicating a shared theoretical understanding. However, operational definitions exhibit considerable variability, reflecting diverse applications and interpretations in practice.

## Scientific consensus

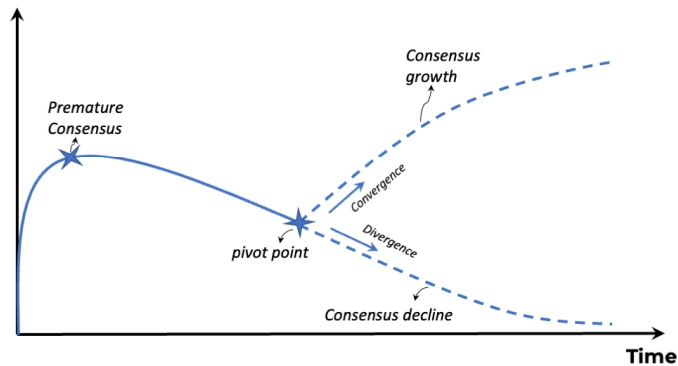


Fig. 1 Scientific consensus process.

Several impediments to achieving consensus in resilience research are identified. These include the lack of standardized terminology, ambiguity in resilience governance roles, challenges in defining the boundaries of complex systems, and inadequate data-sharing protocols. These barriers contribute to the conceptual disparity and affect the practical application of resilience principles across different domains.

The study also highlights the interplay between the exploration of innovative ideas and the consolidation of existing knowledge in resilience research. It emphasizes the risks associated with premature convergence, which could lead to an oversimplified view of resilience, and the complexities introduced by excessive divergence, particularly in educational contexts. Addressing these challenges necessitates a strategic balance, fostering innovation while maintaining consistency in resilience studies.

To tackle these challenges, the paper recommends developing a universally accepted resilience lexicon, conducting regular and comprehensive systematic reviews, and enhancing open dialogue among researchers and practitioners. Forming interdisciplinary groups and engaging in consensus-building activities, led by experienced researchers, is vital to integrate diverse perspectives and refine the understanding of resilience.

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