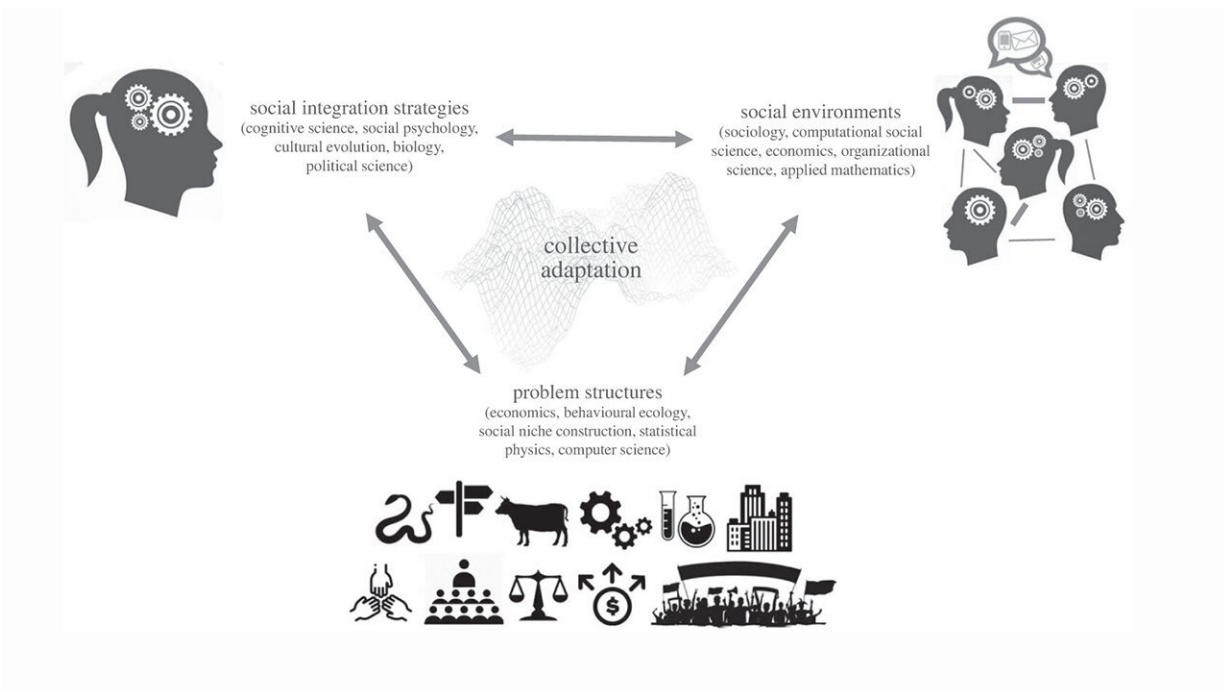


Study presents new conceptual framework for how societies adapt to change

April 18 2023



Collective adaptation can be seen as an emergent property of a complex socio-cognitive system driven by dynamic interactions of social integration strategies, social environments and problem structures collectives face. Credit: *Journal of the Royal Society Interface*/Galesic et al

In times of crisis, groups of people respond in a variety of ways—with sometimes vastly different outcomes. A company might be resilient during a recession while another business fails. Some groups refused to

get vaccinated for COVID-19, remaining more vulnerable to the virus, while others quickly adopted the new vaccine. Why do some communities and organizations struggle to respond deftly to threats? A new paper in the *Journal of the Royal Society Interface* presents a new conceptual framework that could provide answers in the future.

For years, scientists across multiple disciplines have studied [collective intelligence](#), or how groups work together and solve problems. Researchers have tried to understand which groups successfully manage a set of tasks—basically who is "smart?" These types of insights are useful, but can only help organizations so much in dealing with day-to-day issues.

"Rather than asking how successful a team is on a limited set of static tasks, we should seek to understand how collectives grapple with more complex and dynamic situations," says SFI External Professor Henrik Olsson, one of several SFI-affiliated authors of the new paper. In it, the authors describe the concept of collective adaptation that maps out how human groups, such as families and countries, evolve as their circumstances change.

Most studies in collective intelligence focus on a team facing a single challenge. On the contrary, the new approach acknowledges that groups constantly navigate a number of different issues. For example, a country consumed with war may be ill-equipped to tackle an emerging threat like a global pandemic.

The collective adaptation framework asks pertinent questions such as, "How did a group get here?" and "Where does it go from here?" It focuses on tracing a society's journey rather than evaluating its intelligence. "We want to see how collectives adapt over time and understand the path they take in solving various problems along the way so we can be better prepared for future problems we might face," says

SFI Professor Mirta Galesic, the study's lead author.

The framework may also explain why some groups are more prone to fall for misinformation and pseudoscience, thwarting a society's ability to tackle a challenge.

The authors have also identified models, such as those in [statistical physics](#) and [cultural evolution](#), that scientists can use to study adaptation in human collectives. Eventually, Galesic says, they may have to combine different modeling candidates to examine various elements of this complex process.

Galesic laments that [social scientists](#) often work in silos. But the [conceptual framework](#), which integrates findings from many different fields, will pave the way for [interdisciplinary research](#) on group behavior and will help untangle pressing societal issues. "We as social scientists have somehow failed so far to be very useful when it comes to big problems like war, pandemic, and climate change denial," says Galesic. She is hopeful that the collective adaptation paradigm will change that.

More information: Mirta Galesic et al, Beyond collective intelligence: Collective adaptation, *Journal of The Royal Society Interface* (2023). [DOI: 10.1098/rsif.2022.0736](https://doi.org/10.1098/rsif.2022.0736)

Provided by Santa Fe Institute

Citation: Study presents new conceptual framework for how societies adapt to change (2023, April 18) retrieved 25 June 2024 from <https://phys.org/news/2023-04-framework-societies.html>

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