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The Emerging Science of Multisystemic Resilience: Trade-offs and Transformations in Contexts of Adversity

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This paper explores the concept of resilience as much more than a personal capacity to overcome adversity. Using reflections from ontology, ethics and epistemology, this paper offers philosophical contextualisation of resilience thinking and the corresponding paradigm shift. It shows that individual resilience depends on a person's ability to navigate their way to the resources they need for well-being while making multisystemic resources available in ways that are meaningful. Paradoxically, resilience is a consequence of how these multiple systems interact to support positive development and the feedback loops and trade-offs necessary to ensure that a single system's success does not compromise the resilience of other systems. Five patterns of resilience are discussed, each a viable solution to coping with stress.

Keywords: resilience – multisystemic – trade-offs – social justice – positive development – risk exposure – philosophy of resilience – ontological paradigm – ethical shift

Introduction

Over the past three decades, the concept of resilience has been studied through the lens of various disciplines, and its interpretation has often depended on the implicit philosophical underpinnings of these approaches. The philosophical motives for introducing and scrutinizing the concept of resilience are very

often guided by a critique of a human being as an autonomous, sovereign and self-conscious individual who develops deliberately chosen relationships with their environment mainly on the basis of moral and rational reasoning, appropriation and control. Although this simplistic Cartesianism has been subject to persuasive criticism from many philosophical schools and scientific disciplines, the conception seems to have a tendency to persist, including in the study of how individuals and other systems cope with exposure to an atypical amount of stress (a process commonly referred to as resilience) (Masten 2014). This emphasis on the personal agency of the individual is now an anachronism amid a field of study which is no longer concerned with just one or two systems and their interactions, but is instead moving to account for multiple co-occurring systems and their complex, indeterminant patterns of interaction. Philosophically, the concept of resilience has moved from linear, contained understandings of exceptional personal capacity under unusual circumstances to a more processual, contextual, and multisystemic accounting of human-environment interactions leading to better-than-expected outcomes under conditions of adversity.

Resilience research has, therefore, become an exemplary field that aspires to encompass simultaneously all struggles to reinterpret the human ontology, ethics and socio-political organizing at once. Moreover, it attempts to preserve the extraordinary complexity with which human beings must be approached if we are to take into account all forms of their embeddedness within larger systems. In this respect resilience theory is philosophically anticipated in the works on non-essentialist ontology (Foucault 1966; Marion 1981; Levinas 1998), embodiment and enactment theories (Changeux – Ricoeur 2000; Merleau-Ponty 1964), theories of power, normality and health (Foucault 1954; Canguilhem 1966; Butler 1997; Koubova 2024), relational ethics and ethics of care (Held 2006; Gilligan 2011; Urban – Koubova 2019), and theories of communication and understanding (Derrida 1984; Habermas 2008).

In this sense, the resilience approach is entirely consistent with what, for instance, Judith Butler articulates as follows:

> Does the postulation of a subject who is not self-grounding, that is, whose conditions of emergence can never fully be accounted for, undermine the possibility of responsibility and, in particular, of giving an account of oneself? (Butler 2005, 19).

Like Butler, resilience theory rejects the determinism or the conception of powerless subjectivity. Instead, it explores in detail how to answer the question

of thriving in life, positive development and coping strategies within complex human-environment interactions.

The aim of the following article is to provide an overview of the relevant perspectives and challenges that come with this emerging contextualized, processual theory of resilience. It demonstrates through the internal negotiations within theories of resilience how advanced philosophical reflection in the areas of ethics, politics, physiology and ontology is needed if the implicit Cartesianism of our understanding of resilience is be overcome. To address the blind spots that often appear in one-dimensional approaches to thriving, this article also reviews five general patterns of resilience across systems that have theoretical validity regardless of their situational application.

I. Ontological Shift

The field of resilience has been changing over the past three decades from a focus on individual capacity to a conceptualization of multiple systems evolving. This shift from resilience as a strictly intrapsychic phenomenon that focuses on cognitions as the primary antecedent of positive human development under stress has been superseded by to a greater acceptance that contextual factors like family and community, and constructs like culture and collective values and beliefs, must be accounted for in any explanation for why an individual achieves better than expected outcomes when exposed to atypical stress. This shift from resilience being defined as the individual's capacity to 'bounce back' after adversity to a more complex understanding of resilience as a process of individuals navigating their way to the internal and external resources they need to thrive under stress, and the ability to negotiate with systems to provide resources that are most meaningful, leads to a definition of resilience that is much more precise and contextually sensitive (Masten – Tyrell – Cicchetti 2023; Ungar 2021). This change in conceptualization represents a paradigmatic evolution from a one system (the psychological) focus to a complex, multisystemic explanations of optimal development. It also indicates a shift in understanding of the resilience construct from a nomothetic to a more idiographic interpretation of the factors that facilitate coping under conditions of adversity. Many scholars of resilience are now promoting a perspective of positive development that responds to the rhetorical question: "Which promotive and protective factors for which individuals exposed to which risks are likely to support the greatest positive developmental outcomes that are the most desirable and culturally relevant to those involved?" Answering such a question requires far more contextualization than has historically been used

in studies of resilience where single populations (most typically psychology students at American and British universities) were assessed for protective factors hypothesized to be associated with aspects of personal adaptation like attribution style or personality traits. Such studies now appear as dated amid growing confrontation by minority scholars who argue that resilience must be understood from people's own perspectives and account for local discourses of positive development (Spencer, 2024).

II. Ethical Shift: From Individual Responsibility to the Theory of Equity

This change in our understanding of resilience is not just ontological, with more systems requiring measurement. It has also required an ethical change in how resilience is achieved and negotiated, at whose profit and at whose expense. Resilience scholars who are accounting for the interactions of resilience-enabling factors across multiple systems are demonstrating that no single factor at one systemic level can predict positive developmental outcomes (Southwick – Bonanno – Masten – Panter-Brick – Yehuda 2014). Instead, the meaningfulness of a protective factor is negotiated by systems, with different systems placing different amounts of value on the factors that make resilience most likely. This change has brought with it ethical implications as well, with the need to account for issues of social justice when documenting patterns of resilience, as well as to account for whose narrative of successful development is being privileged. For example, where earlier studies of resilience tended to pay little attention to contextual factors like structural disadvantage and racism, or cultural norms that framed definitions of what is and is not a sign of successful adaptation, we now understand that efforts to challenge inequality and the daily practices that support social marginalization which institutionalize inequality are population specific means to resist hegemony and oppression (Spencer 2024). These patterns of resistance and growth in socially toxic environments lead to unique expressions of resilience like a hesitancy to acculturate among first generation racially marginalized migrants. This strategy protects one's sense of self-concept, sustains language acquisition across generations in a diaspora, and maintains continuity of one's social network across borders, which combined, have been shown to maintain the mental health of migrants (Berry – Phinney – Sam – Vedder 2006). While patterns such as this may be demonstrably beneficial to the population using them, other social actors with more power may label these patterns of coping as a vulnerability rather than a unique expression of resilience privileged by a specific marginalized community as

their pathway to successful adaptation under stress. Such idiosyncratic means to experience resilience are, by their nature, site specific. They are also more ethical, giving populations experiencing the most stress and adversity the foreground when it comes to defining their experience of coping.

The increased volume for marginalized voices in resilience research has also given rise to more attention to competing discourses of what is, and is not, resilience, implicating multiple social, institutional and political actors in deciding who will be assessed as "coping well." To assert that resilience is the result of the exercise of personal agency alone is a naïve understanding of the complex interactions across multiple systems that make it possible for people to succeed. Psychological health is only partially influenced by cognitions like a future orientation and gratitude. It also depends on macro-economic conditions that make jobs available and sets the minimum wage. Understood this way, resilience implicates housing and the distance people must travel to find work each day (and the quality of the public transit system they use). Likewise, access to social programs and an equitable system of taxation and policing all combine to create the conditions for individual mental health under conditions of adversity. As the science of resilience advances, we are becoming better at understanding the amount of variance each of these co-occurring systems exerts on individual developmental outcomes. Likewise, we are now understanding that biological processes are also implicated in how resilience is experienced, with studies from diverse areas like neurobiology and epigenetics showing that resilience to stress results from the interplay between an individual and their environment (Pluess 2015). Of course, while all these systems interact, they may not all be amenable to change. In practice, different systems have a differential impact on outcomes (Ungar 2018).

Imagine, for example, two migration scenarios. In the first instance, a single individual from their country of origin arrives as an undocumented asylum seeker in a western European nation. With no language skills and no diaspora to support their integration, individual hardiness will matter a great deal, with motivation and intelligence likely to predict economic and social success. In this instance, learning a new language, finding a job, and navigating the complexities of government rules concerning migration will likely demand incredible individual competence. If few are successful in such circumstances it is easy to understand that far from the "ordinary magic" of resilience (Masten 2014, 7), in a condition where so few external resources exist, the need for internal strengths to persevere will be essential.

Contrast this example with being a forcibly displaced refugee registered with the United Nations High Commission for Refugees and eligible for resettlement in a country like Canada. Canadian immigration policy has favored a system of sponsored refugees where private and government sponsored refugees can be resettled and enjoy access to a long list of financial and service supports available to them, from healthcare and language classes, to links with not-for-profits that help with housing and employment. In this case, there is a greater likelihood for a less exceptional group of migrants to succeed as even a small amount of motivation and far fewer skills are required to resettle. In this example, the differential impact of individual "grit" is more predictive of better-than-expected outcomes and a critical feature of the process of resilience when external resources are scarce.

III. Epistemological Shift: From One Understanding of Resilience to Many

In this emerging understanding of resilience as a negotiation between systems to provide access to the most important promotive and protective factors, there is a paradox. The resilience of any one system can compromise the resilience of co-occurring systems, with one system's success coming at the price of another system's viability. This brings about an epistemological conflict: is resilience of one kind? Is it multiple? Is it momentaneous? Or does it change over time?

To account for these multiple perspectives of resilience, one must understand both the feedback loops and trade-offs that accompany resilience. For example, an individual's success can result in a biological, psychological, and social burden that eventually exhausts their coping capacity. This allostatic load is known to be cumulative among populations exposed to chronic stress, whether because of constant bombardment during war (Hobfoll 2011) or the constant aggression of racism. From a multisystemic perspective, resilience has limits. One system's success may compromise another's (producing a negative feedback loop). In some cases, the risk is considered reasonable, though in others the trade-off between the promise of successful coping under stress and short and long-term outcomes may be judged as excessively risky.

Because resilience depends on social, cultural, institutional and environmental factors, the field has in recent years become far more politicized. Where once there was a neo-liberal emphasis on the invulnerability of a child growing up amid adversity, with the child's individual capacities hypothesized to predict positive development (Anthony 1987), research is now accounting for the way access to resources (and the political gatekeepers that

control access to those resources) shape the individual's ability to thrive under stress. Without this contextualization, resilience science runs the risk of reifying institutionally oppressive hierarchies. When that happens, there is typically resistance to the concept coming most from communities that have been pushed to the margins historically. For these communities (often racially marginalized), there is a weariness with the discourse of resilience when it implies adaptation to stress is an individual responsibility.

IV. Five Patterns of Resilience

The experience of resilience is phenomenologically dependent upon the many social, structural and discursive factors found within an individual's community. How one adapts to stress and marshals together the resources necessary for optimal psychological and social wellbeing will always reflect the dynamic interplay of power, culture and governance and their combined influence on resource availability (Atallah – Bacigalupe – Repetto 2012). In this sense, the question of living well and thriving does not fall exclusively within ethics of virtues and deontology and does not concern exclusively the performance of the individual's life, but fundamentally works with the ethics of the relational environment (Urban – Koubova, 2019).

While there are many possible ways that individuals can navigate the complex associations between factors, a survey of the relevant literature across disciplines shows at least five recurring patterns to multisystemic resilience, each bringing with it the potential to help one or more systems succeed, as well as the possibility that any single system's success could compromise that system's long-term ability to cope. These five patterns are persistence, resistance, recovery, adaptation and transformation (Ungar 2018). Each provides an account for how individuals might adapt to stress, with their choice of strategy reflecting the opportunity structures available to them. Change the opportunities an individual experiences and the strategies available to experience resilience have the potential to change as well.

A. Persistence

A system may show resilience by persisting with a well-established pattern of behavior that ensures continuity of functioning. System continuity, however, usually comes with two requirements. First, external systems must protect the focal system from disruption, as a system can only persist if protected from change. Authoritarian regimes demonstrate an odd (and immoral) ability to

persist, often with the support of many of their citizens, in large part through promises of ideological strength and social stability.

The second condition necessary for persistence comes from within the system itself. Patterns of coping must make sense to enough parts of the system (e.g., citizens living under an authoritarian regime) to have the system profess its desire to persist rather than change. Persistence tends to occur when systems are well-differentiated from other systems, with little information travelling from one to another (e.g., tight border controls between countries).

B. Resistance

Eventually, a system's ability to control its destiny shatters. External and internal forces can confront the contradictions inherent in a system and change becomes necessary. When attacked, and persistence becomes impossible, however, both individuals and larger systems like communities will first actively resist change as a strategy for coping under stress. This pattern of resistance is common to many resource-based economies (sometimes referred to as the "resource curse" ((Murphy et al. 2022; Torres – Afonso – Soares 2013)) with people willing to tolerate economic boom-bust cycles in the hope that their livelihoods will continue. In instances like this, a pattern of social resistance is co-constructed as resilience. It is only when a set of values and a social justice perspective is introduced into the conceptualization of resilience that a judgement can be made about whether a strategy to cope with adversity is good, bad, or benign. Not all pathways to resilience are equally beneficial to all systems which is why persistence and resistance can be good, bad, or both depending on how one is individually affected. Resistance, then, is a resilience strategy that requires careful evaluation to understand the trade-offs it produces. Which pattern of resilience a society privileges will depend on the social location and power of those who define success and those who provide the social, economic, political and ecological resources necessary for that success to occur.

C. Recovery

The idea that systems recover to a previous state of homeostasis is an ontologically flawed idea, but one which persists in our understanding of resilience. By the very fact of having been perturbed, a system is changed, either by integrating new knowledge of how to cope with future insults or by being depleted of some of its resources. In most instances, recovery brings with it new patterns of coping.

D. Adaptation

By far, the most common pattern of resilience seems to be adaptation. People, embedded within systems, find ways to accommodate the stressors they experience and maintain normative functioning. Adaptation generally assumes that the individual changes behavior, cognitions, or access to resources (like freedom, or economic security) to accommodate the needs of larger systems to persist. Adaptation implies change, but more at the level of individuals than institutions.

E. Transformation

The fifth pattern of resilience is transformation. It is often perceived as the most beneficial and enduring because it does not ask individuals to change, but instead changes the external environment around the individual to make it easier for individuals to succeed. In this sense, there is a series of systemic modifications that create a cascade of positive feedback loops. Transformation tends to have historical weight. For example, transformation creates enduring change when those that govern enact new laws that recognize the rights of minorities, workplaces are required to address harassment, and public education accommodates children with disabilities. Each transformation produces a macrosystemic change that creates conditions for individuals to experience greater success without resorting to the responsibilization of individuals for their own development (Bottrell – Armstrong 2012).

While transformation may appear positive, as noted earlier, it still carries with it the possibility of trade-offs depending on which system one is focusing attention on. Resilience is never a guarantee of success for every co-occurring system. It is simply a way that some systems thrive while other systems experience trade-offs.

V. Conclusion

If we ask the philosophical question of what human development is and how a person can thrive when they are embedded in multiple systems over which they have no control, we open up not only a complex theoretical topic, but also one that must be explored in a practical way with sensitivity to cultural and social contexts. Resilience theory, as a theory of coping and thriving during crises requires from the outset the collaboration of applied social sciences and philosophy. In this article, we have briefly presented support for an ontological, ethical and epistemological paradigm shift that must occur simultaneously, not only in philosophy but also the applied sciences. This shift

will prevent the practicing and replicating of simplistic Cartesian interpretations of the positive developmental processes.

As we have shown, there is emerging evidence that resilience lies not in our ability to simply recover as individuals, but in how well co-occurring systems enable us to persevere with longstanding patterns of coping, resist change, adapt to adversity, or participate in the transformation of the many systems which impact our lives. Each pattern depends on both formal governance structures and the diffuse power of social discourses to influence whether it is possible to maintain resilience or if one will be forced to change. Each system has a potential role to play in resilience, but each system also influences the functioning of co-occurring systems, resulting in a model of resilience that engages multiple systems in mutually dependent interactions.

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