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Transformational Resilience and Future-Ready Cooperative Governance Systems

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13.1 Introduction

Over the past decades and increasingly with each year that passes, the urgent need to build and rebuild healthy and strong social, economic, and environmental (SEE) systems amidst crises looming on multiple fronts is evident.[1] Today's test for governance adept at achieving sustainability of all organizations, including cooperatives, is the capacity to

[1] Various frameworks are referred to in this chapter, e.g. United Nations Sustainable Development Goals (United Nations, 2015), Planetary Boundaries (Steffen et al., 2015), Doughnut model (Raworth, 2017), World Business Council for Sustainable Development Vision 2050 (WBCSD, 2021). SEE is used as shorthand for social, ecological, and economic (SEE), and in some places it is spelled out for emphasis.

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adapt, thrive, and survive in a tumultuous future. This chapter focuses on transformative resilience as a key ingredient and leverage point in cooperative governance systems.

Proof of the cooperative enterprise model's resilience in the face of a combination of social, economic, and environmental disruption (where economics may not be the source but will be implicated) is not well understood, tested, or researched. Additional research is necessary and important to our collective understanding of how the cooperative purpose and model fit in a complex and troubled world. This conceptual chapter starts the conversation and draws connections among complexity, resilience, the need for transformation,[2] and the design and execution of future-ready cooperative enterprise[3] governance systems.

The chapter begins by framing the global SEE context, taking an integrative and holistic view—a view that should compel cooperatives to future-proof their model to face increasingly uncertain and difficult social, economic, and environmental realities. Next, the chapter takes the SEE orientation and applies a resilience lens, drawing on concepts, definitions, and sets of principles (Lewis & Conaty, 2012; Stockholm Resilience Centre, 2015; WBCSD, 2020). Connections are made between resilience and the cooperative enterprise model strengths and governance system advantages. The chapter concludes by suggesting that while cooperative governance systems are well enough understood in the context of relatively stable past and current socio-economic and ecological circumstances, *dynamic external forces* are a serious risk for cooperatives in the years to come. In the face of these forces, cooperatives that embrace the tenets of democratic, participatory, people-centered, and networked governance systems are aligned with transformational resilience capability and the increased likelihood of long-term survival.

[2] Transformability is explained as the "capacity to create a fundamentally new system when ecological, economic or social structures make the existing system untenable" (Walker et al., 2004, [no pagination]). See Novkovic and Simlesa, Chapter 14 in this volume for a discussion of the framing of transformation in the literature.

[3] Enterprise governance to distinguish from global multi-partite governance efforts. This chapter's interpretation of enterprise governance does include inter-enterprise networking as this is a cooperative enterprise model strength.

13.2 Integrated Social, Ecological, and Economic (SEE) Worldview

For many decades, much has been written that highlights the interrelated nature of social, ecological, and economic systems (Hawken, 1993; Hawken et al., 1999; United Nations, 2015; Whiteman et al., 2013). For the most intractable of SEE problems, an integrated response requires collaboration and mobilization of business, government, civil society, households, and individuals. It is clear that solutions will not come from one level alone (e.g. coordinated global initiatives), and reliance on political mobilization and business sector transformation has been too slow. Actors at different levels (including individuals and organizations of all types) must be knowledgeable and take responsible action on complex, interrelated issues on the ground. While SEE systems are inextricably linked, it has proven difficult to create synergy between the needs of complex systems and action.

Immediate and urgent action is required to combat environmental disasters, social upheaval, and economic inequality. The eight Millennium Development Goals, and now the 17 United Nations Sustainable Development Goals (SDGs) coupled with a 2030 Agenda, have sounded the alarm on everything from poverty and equity to biodiversity loss and climate crisis (United Nations, 2015; United Nations General Assembly, 2000; UN Climate Change, 2021). While the assertion of the UN's 2030 Agenda is to leave no one behind, the reality is that effects are not equitably distributed. For example, the dominant capitalist economic system has consolidated and concentrated wealth and power into the hands of a few, and market, political and regulatory structures do not internalize myriad social, environmental, and economic externalities.

The connections between human activity (economic and social) and non-human ecosystems are indisputable, with the Planetary Boundaries framework[4] providing the evidence of environmental distress across

[4] Johan Rockström and 28 internationally renowned scientists identified the nine processes (and associated quantitative boundaries) that regulate the stability and resilience of the Earth system and within which humanity can continue to thrive into the future. The framework has generated enormous interest within science, policy, and practice. https://www.stockholmresilience.org/research/planetary-boundaries.html.

the nine identified global system processes. Four of the nine planetary boundaries have exceeded their safe operating space, signaling irreversible changes that affect not only ecological systems, but also economic and social systems (Steffen et al., 2015). Kate Raworth's (2017) doughnut model incorporates the planetary boundaries and builds in social boundaries, stating "[b]etween these two sets of boundaries lies an ecologically safe and socially just space in which all of humanity has the chance to thrive." The current levels of socio-ecological disequilibrium point to the pressing need for systemwide transformation to regenerative and distributive approaches, and the "[d]oughnut might act as a 21st century compass … this century is likely to be the first in which humanity begins more fully to understand and appreciate the complex interdependence of human wellbeing and planetary health" (Raworth, 2017, p. 49).

The World Business Council for Sustainable Development (WBCSD) echoes these claims and, within its Vision 2050, urgently calls for leadership in the transformation of business to ensure that over nine billion people live well within the planetary boundaries by 2050 (WBCSD, 2021). In their words, the "transformations will depend on three critical strategic business mindset shifts: reinventing capitalism to reward true value creation, not value extraction; building long-term resilience; and taking a regenerative approach to business sustainability" (p. 81).

Leadership and action are required at all levels: individuals; communities; organizations; networks; locally; regionally; nationally; globally. From an economic and business perspective, a paradigm shift is required to move away from a model of business as usual, incremental change, and instrumental logic (e.g. business case based on return on investment and cost–benefit analysis). The cooperative enterprise model is well designed to build a healthy future for people and the planet, and they meet these expectations when their values and principles are applied deeply as outlined in the Statement on the Cooperative Identity (ICA, 1995).

13.3 Resilience in the Face of Complexity

> 'Resilience' is becoming a buzzword. Sometimes it is open to interpretation and sometimes it is simply wrong. (Walker, 2020, [no pagination])

Resilience is a term that has been used across disciplines, conferring varied meanings and applied to different contexts. Interest in resilience has exploded since the early 2000s, with increasing interest and research documented in scientific and organizational literature (Folke, 2016; Raetze et al., 2021).[5] Therefore, determining the best definition for a particular context can result in a confusing compilation of incompatible concepts and theoretical bases. A set of definitions is included here, all of which contain elements of complexity and the acknowledgment of the importance of ecological, social, and economic systems. Threads of these definitions will be carried through the rest of this chapter.

While the Anthropocene era started in the late 1800s (Crutzen, 2002), the twenty-first century is marked by the consequences of prolonged, unsustainable human-induced activities (economically driven) that are negatively affecting life-supporting planetary systems. Early natural science definitions of resilience did not provide much (or any) language to explain current circumstances in the business context. Scientific definitions of resilience started with a narrower concept of the term, associating it with bouncing back from disturbance and a return to the previous state (Holling, 1973); it was not yet about global system transformation given that complex, large-scale system disruptions were not accepted as inevitable in the 1970s. Increasingly, building on the early ideas of eminent scientists such as Holling, resilience definitions now make clear SEE connections, and frame resilience in a dynamic (not static) context. The Stockholm Resilience Centre defines resilience as "the capacity of a system, be it an individual, a forest, a city or an economy, to deal with

[5] Folke (2016) states that "[t]he number of scientific publications on resilience in relation to the environment has during this period increased from some 250 to well over 6000 publications. The annual citations have jumped from less than 100 in year 1995 to more than 20,000 citations in 2015" ([no pagination]). A review article by Raetze et al. (2021) found a similar upward trend with resilience research in organizations at the individual, team, and organization level, across various disciplines.

change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking" (2015 [no pagination]).

WBCSD's Vision 2050 is an enlightened business view that is becoming more common in the wake of conscious capitalism (Mackey & Sisodia, 2013) and the move to "purpose beyond profit." WBCSD's vision requires business mindset shifts, one of which is building long-term resilience. As defined by WBCSD resilience focuses on conscious transformation with the goal of thriving for the long term, while acknowledging the need to anticipate, prepare, and adapt to changes. Vision 2050 is problematic in so far as a resilience mindset is required but also acknowledged as new and unfamiliar to many in business. That being said, the WBCSD framing of resilience is important as it positions resilience using language that can be understood by industry and enterprises, and it reinforces the critical importance of engaging business leaders in understanding resilience from different perspectives so that they are able to integrate human and non-human system dynamics in their business decisions.

13.3.1 Resilience Principles

The translation of resilience research and definitions into sets of principles helps in the sensemaking process and application of the principles in an industry or to an enterprise. The Stockholm Resilience Centre (SRC) has devised a set of seven *principles* for building resilience in socio-ecological systems, namely: maintain diversity and redundancy; manage connectivity; manage slow variables and feedbacks; foster complex adaptive systems thinking; encourage learning; broaden participation; and promote polycentric governance. These principles have significant overlap with Lewis and Conaty's (2012) application of their own seven *principles* for achieving resilience in the cooperative context: diversity, modularity, social capital, innovation, tight feedback loops, overlap, and ecosystem services. And, the World Business Council for Sustainable Development (2020) proposes four key *attributes* for business resilience:

diversity, modularity, cohesion, and adaptability. There are similarities and differences among these sets of principles and attributes (see Table 13.1).

A comparison among three sets of resilience principles and attributes is helpful in making the connection between resilience with origins in

Table 13.1 Resilience definitions and principles

Stockholm Resilience Centre[6]	Lewis and Conaty (2012)	World Business Council on Sustainable Development, Vision 2050 (WBCSD, 2021)
Resilience definition: "The capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking" (2015 [no pagination])	**Resilience definition:** Drawn from science as "the amount of change a system can undergo (its capacity to absorb disturbance) and essentially retain the same functions, structure, and feedbacks" (p. 18)	**Resilience definition:** "A business's ability to anticipate and prepare for change, then adapt to circumstances in the manner that provides the greatest chance of thriving over the long-term" (WBCSD, 2020, p. 6)
Resilience principles for social-ecological systems: • Maintain diversity and redundancy • Manage connectivity • Manage slow variables and feedback • Foster complex adaptive systems thinking • Encourage learning • Broaden participation • Promote polycentric governance	**Resilience principles for cooperatives:** • Diversity • Overlap • Modularity • Tight feedback loops • Ecosystem services • Innovation • Social Capital	**Key Attributes of Resilience:** • Diversity • Modularity • Cohesion • Adaptability

[6] See Hauge Simonsen et al. (2015).

complex natural systems (Stockholm Resilience Centre), using cooperatives (Lewis and Conaty), and current thinking in progressive sustainable business circles (WBCSD). Through the lens of the Stockholm Resilience Centre's principles, maintenance of diversity and redundancy, plus managing connectivity, are represented in diversity and modularity (WBSCD; Lewis and Conaty). Overlap and tight feedback loops in Lewis and Conaty are captured in SRC's principles of managing connectivity, slow variables, and feedback; these elements are not made explicit by WBCSD. Fostering complex adaptive systems thinking and encouraging learning show up well enough in adaptability (WBCSD) and ecosystem services and innovation (Lewis and Conaty). Broadening participation is amplified by WBCSD's cohesion attribute and the principle of social capital (Lewis and Conaty). Lastly, the promotion of polycentric governance only appears in the Stockholm Resilience Centre's set of principles. In the next section, the critical importance of all principles, and polycentric governance in particular, is discussed in the context of cooperatives.

13.4 Discussing Resilience and the Cooperative Model

Cooperative enterprises have proven themselves to be a long-lasting and resilient form of business (Merrien et al., 2021), and it is well understood that cooperatives adapt to unfavorable conditions for the economic and social benefit of members (i.e. co-op users who own, democratically control, and benefit from the organization). They weather economic downturns well (depending on the sector) (Pérotin, 2006), attributed to such factors as the intergenerational and long-term planning orientation of a cooperative (versus short-term profit maximization), employment stability (Navarra, 2016), networked structures and inter-cooperation principle (Jankovic et al., 2021), and the people-centered nature of the model.

What does putting the resilience lens on the co-op model tell us? Research to date on resilience and cooperatives has largely focused on economic disruption, downturns, and recessions, and resilience is

described most often in the response (i.e. coping and adapting) to economic risk and crisis (Birchall & Hammond Ketilson, 2009; Co-operatives UK, 2019; Lampel et al., 2014; Merrien et al., 2021; Monteiro & Steward, 2015; Parnell, 2001; Roelants et al., 2012; Sánchez Bajo & Roelants, 2011). The COVID-19 pandemic provided a rich testing ground for severe and prolonged economic consequences coupled with a health crisis, and ongoing research does continue to point to co-op enterprise model resilience (Merrien et al., 2021).

The economic crisis research has demonstrated that cooperative development is countercyclical in nature (Pérotin, 2006), with an increase in cooperatives being created and fewer layoffs (for worker co-ops in particular) during periods of economic disruption (Navarra, 2016), and the buildup of financial buffers such as reserves (Birchall, 2013; Birchall & Hammond Ketilson, 2009; Groeneveld & de Vries, 2009; Merrien et al., 2021; Sánchez Bajo & Roelants, 2011). Furthermore, co-ops embody structural advantages such as: long-term planning horizons, with co-ops being intergenerational entities; the networked structures of cooperatives, especially groups and federations with strong reserves; and the people-centeredness of co-ops, i.e. closeness to members and other strategic stakeholders (Birchall, 2017; Jankovic et al., 2021; Sánchez Bajo & Roelants, 2011).

Existing cooperative resilience research seems to fit within the organizational resilience literature (Duchek, 2020; Ruiz-Martin et al., 2018) and the Béné et al. (2012) view that, during a cyclical economic change where organizations desire stability, we can expect resilience (i.e. persistence) to be focused on absorptive capacity as the system aims to resume a stable state. It is reasonable to assume that cooperatives will continue to prove themselves to be resilient in times of economic crisis, and this experience is useful as we envision the model's strengths in the context of broader SEE challenges. The nature of an economic system disruption presumes an eventual return to stability, however prolonged the crisis period, thus leaning on coping and adaptation organizational capabilities, resources, and mechanisms. The strategic responses to potentially sudden, uncertain, and disastrous outcomes of unprecedented challenges and global system changes (e.g. permanent extreme weather) stretch beyond coping and adaptation (Linnenluecke & Griffiths, 2010). At the

other end of the resilience capacity spectrum, we find transformative capacity (e.g. see the 3-D resilience framework in Béné et al., 2012).

Resilience for this chapter is focusing on a high intensity of SEE change and uncertainty that necessitates organizations to respond with transformative capacity. This discussion is not focusing on the absorptive or adaptive resilience capacity needed for business continuity or robustness most often called upon in an economic (or similar) crisis, and typically viewed more narrowly through an economic lens. Here, resilience is set in the context of interrelated SEE system thinking, with a focus on the outside-in and inside-out connection between an organization (in particular, cooperative enterprise) and the macroeconomic, environmental, and social context (from local to global). This way of thinking is simultaneously focused on the organization as embedded within the SEE system (not existing apart from it), the organization as a healthy component of the system (active in positive transformation), and thus the value of the organization surviving (i.e. cooperatives as a model for resilience).

The following subsections discuss transformational resilience's alignment with specific features of the cooperative model (Miner & Novkovic, 2020; Novkovic & Miner, 2015), the cooperative network governance system, and the related governance structures, processes, and dynamics. See Fig. 13.1 for an overview of these perspectives.

13.4.1 Enterprise Model—Complexity Mindset and Purpose

Complex purpose coupled with a resilience mindset/worldview are the first tests of the cooperative model's alignment with the resilience principles related to complex adaptive thinking, valuing ecosystem services, and the management of slow variables.[7] A cooperative cannot achieve a complex purpose without a resilience mindset, and vice versa. And while the ICA Identity Statement aligns well with an integrated SEE system

[7] Resilience requires the management of slow variables where there is a long-time horizon and delay between cause and effect.

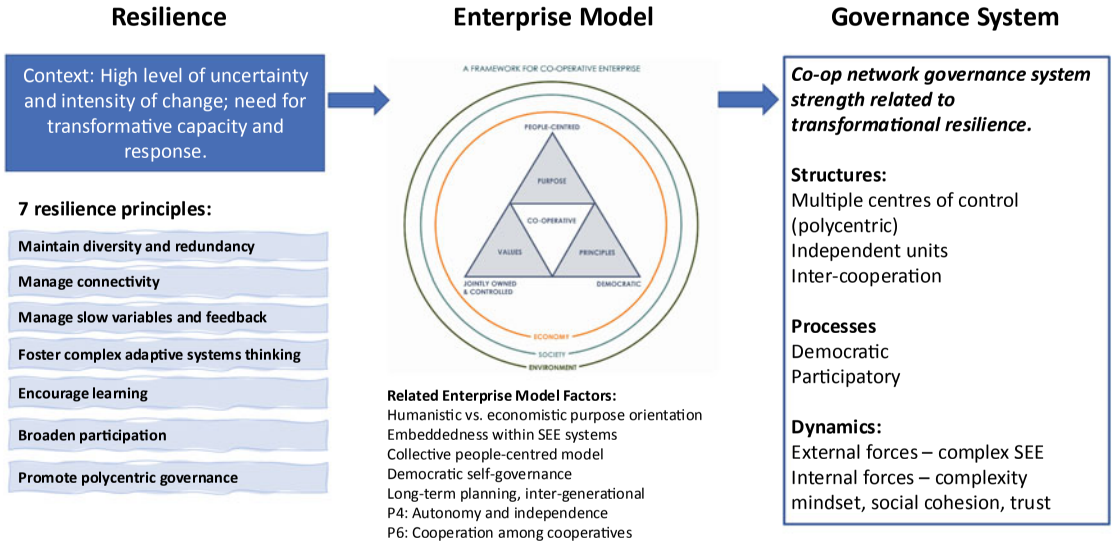

Fig. 13.1 Conceptual framework—linking resilience to the cooperative model and its governance system (*Sources* Resilience principles derived from Hauge Simonsen et al. [2015]; Enterprise Model reproduced from Miner and Novkovic [2020])

view—both implicitly and explicitly—not all cooperatives adhere to or act on a complex and future-ready purpose.

Cooperatives created to address a market failure or provide access to a market may choose to limit purpose to concern for member economic well-being and not see their purpose extending beyond economic benefit for members; these cooperatives do not naturally integrate SEE system transformation into their vision. This is a limitation when considering the current global challenges, and it is a failure to adhere to the complex purpose expectations of the Identity Statement.

Cooperatives that embrace a broader purpose (e.g. SEE injustices), including the desire for social, economic, and/or environmental transformation (Novkovic, 2018), have complexity embedded within "their DNA." A cooperative adopting a complex purpose means that its members will be willing to accept, lead, and act with an integrated social, economic, and ecological worldview, to move from purpose to strategy and practice. It implies that the leadership of the cooperative has made the critical business mindset shift to long-term resilience thinking (WBCSD, 2021).

Amidst day-to-day business realities, competitive pressures, and other negative external forces, the long-term resilience mindset and related complexity (i.e. uncertainty, emergence, change) capabilities are essential ingredients. For cooperatives, this is the opposite of a silo approach; and it is more than a footnote to purpose, an input into strategy, or a disclosure exercise. Cooperatives are designed to push beyond baseline SEE expectations to include humane, just, and people-centered governance and management systems, and this broad cooperative perspective "suggests organizational commitment to total value creation, rather than just shareholder value, and includes equitable distribution of rewards to all key stakeholders" (Novkovic & Miner, 2015). This expansive understanding of purpose is a critical input into the justification and understanding of a cooperative model's alignment with complexity and transformation.

13.4.2 Enterprise Model—Participation, Cohesion, and Social Capital

Compared to other organizational forms, cooperatives provide ample opportunities for broad participation, cohesion, and deployment of social capital, where the people-centered element of the co-op enterprise model is a nexus for discovering these resilience principles in action. As an association of people, coming together to meet common needs and aspirations, the cooperative model is designed to create a strong sense of collectivity (associationalism) based on the development of trust, reciprocity, and caring relationships.

Furthermore, governance systems are grounded in the collective ownership and democratic member control design principles, thus requiring participation, voice, and representation of members in governance and operations (particularly in the case of worker co-ops regarding the latter). The democratic governance processes and structures emphasize open communication and collaboration with members on all aspects of cooperative life, as members play a usership role coupled with co-op ownership, control, and benefit; and, members are place-based, being part of the community fabric surrounding the cooperative.

Most commonly, cooperatives have a single member category that can be homogeneous, thus requiring the operationalization of a people-centered approach if diversity is to be achieved. To achieve this diversity, cooperatives can also expand their membership to become more heterogeneous and/or ensure that all strategic stakeholders are built into the organization's systems of dialogue, engagement, and communication. Resulting participatory governance systems include structures and processes to engage members, and ideally a broader array of strategic stakeholders (e.g. employees, community, suppliers). This broader people-centered approach allows for a diversity of representation and perspectives, which may otherwise be missing if participation is limited to members.

The resilience expectation of broad participation is stronger in multistakeholder co-ops,[8] as more strategic stakeholders are given voice and representation. The deepest and broadest participation of strategic stakeholders is possible through the multistakeholder cooperative structure, where multiple categories of membership (co-op "users") are included; this is the preferred model when considering the best match to participation that confers a legitimate usership role, combined with ownership, control, and benefits roles for strategic stakeholders.

13.4.3 Enterprise Model—Long-Term Planning and Intergenerational Stewardship

Slow variables in resilience require that plans and actions recognize and integrate a delay between cause and effect. The best hope for cooperatives in terms of governing and managing slow variables rests in the model's intergenerational stewardship and long-term planning horizon dimensions.

A cooperative is created by a group of members, implying a legacy of past members (at least for established cooperatives). These past members were the stewards for the current members, with intergenerational handoff occurring naturally in cooperatives. The current members steward this intergenerational asset for themselves, but also to ensure that it exists to serve the future generations of members—through structures such as setting aside financial (indivisible) reserves to strengthen the co-op and for the benefit of future generations; repayment of membership capital at a nominal value; and the use of other deterrents to demutualization.

Contrary to the investor-owned firm, known for its short-term horizon tied to quarterly or annual profitability, the cooperative model plans for the long term. For example, current members are expected to

[8] Classified by the nature of members' interest in the cooperative enterprise, the multistakeholder cooperative form has "more than one type of member with significant involvement in the activity of the cooperative, and in which: more than one type of member is represented in the governance structure of the cooperative; and no type of member has a dominant position through a majority of votes in the governing body or an exclusive veto over decisions" (ILO, 2020, p. 19).

apply a long-term planning mindset to their governance of the cooperative to steer "the organisation in the right direction for the long haul; [governance] will be situation and context specific, driven by members, their needs, and the needs of the next generation of members" (Novkovic & McMahon, Chapter 2 in this volume).

While the long-term planning and intergenerational horizon are cooperative advantages contributing to resilience and ensuring the longevity of cooperatives, alignment with the intent of this resilience principle in the SEE context is applicable to cooperatives that embrace a complex purpose and transformational mindset. It is the current members' role to recognize, govern, and manage member vulnerabilities, and in light of SEE system challenges (e.g. capacity to cope, adapt, and transform in response to climate change). It is incumbent on all cooperatives to turn their mindsets and shift their purpose in the direction of the complex world they are part of. The intergenerational nature of the cooperative model requires it.

13.4.4 Enterprise Model—Networks of Inter-Cooperation

Nested and inter-connected networks of people and organizations, at all levels, is a powerful component of the cooperative system, and one of the most convincing contributors to resilience from a cross-sectoral and local to a global perspective. Networks are so much a part of the cooperative approach that, according to Menzani and Zamagni (2010), "networking is not one opportunity among many others, but rather it is the *normal* way of operating as a result of their solidaristic dimension" (p. 122). These networks create connectivity, redundancy,[9] modularity, and diversity—all resilience features—and contribute to reducing the risk of system collapse when faced with shocks and disturbances. The

[9] Redundancy in resilience parlance is a positive characteristic. Two types of redundancy add strength to a system: 1) functional redundancy (more than one component able to perform a function) and response redundancy (components reacting differently to change or disturbances). See Hauge Simonsen et al. (2015).

cooperative system connects to these resilience features through Principle 6 (cooperation among cooperatives) and Principle 4 (autonomy and independence) as it is interdependence and independence that creates system strength.

In practice, Novkovic and Holm (2012) document five types of cooperative networks: (1) cooperatives themselves (as networks of individual members); (2) interorganization networks for a specific purpose (e.g. second-tier co-ops; or co-op federations); (3) supply chain networking with other co-ops; (4) membership in networks/associations for particular member services; and (5) multistakeholder complex networks, often outside the core area of co-ops' business. Brought together into a system, the five types of networks result in an integrated web of relationships and organizations across a diversity of membership types (producer, worker, consumer, and multistakeholder), and with representation across diverse sectors of the economy and society (e.g. food, finance, social services, energy, etc.). Furthermore, there is redundancy and overlap as memberships cross among cooperatives. At the local level, a member of a credit union may also be a member of housing, retail, energy, food co-op, and beyond. Beyond an individual member or cooperative, inter-cooperative solidarity is strong across the cooperative movement, whether that takes the form of, for example, the sector-wide coordination of purchasing for food co-ops; multi-sector membership in a national apex organization; or the social welfare systems in the Mondragon federated cooperative network structure.

The cooperative sector builds natural connections between and among cooperatives, with no limits on geography, presenting the opportunity for strategic multi-level linkages and coordination of solutioning (e.g. individual co-op, among co-ops, national apex, global apex). Cooperatives create networks of associations and federations (with local to global reach) to strengthen cooperative systems at all levels, while maintaining connections within and between sectors and types of co-ops. These overlapping governance structures and strategic relationships result in knowledge transfer, interdependencies among cooperatives, and opportunities for vertical cross-scale support and capacity (or horizontal, e.g.

inter-country). Principle 6 specifically addresses the vulnerability of a single cooperative, regardless of size, and makes all cooperatives stronger through the combining of micro, meso, and macro-level connections (Eum, 2012).

Cooperative Principle 4 (autonomy and independence) guarantees modularity at the micro level, and between and among cooperatives at various levels (e.g. a credit union is but one member of the regional structure to support credit unions; the regional level entity is a member of a national association; and from national to global associations and federations). This aspect of modularity is essential, and is supportive also of functional and response redundancy to avoid an overly connected system "susceptible to shocks that are rapidly transmitted throughout the system" (Lewis & Conaty, 2012, p. 20).

Collectively these diverse inter-connected, but also modular and redundant, structures at many levels create a supportive system. On the one hand, cooperatives are ready to respond collectively and democratically across sectors with existing participation and engagement structures and processes in place. On the other hand, this system of inter-cooperation is a contributor to and catalyst of the broad participation of members, as well as a mechanism to diffuse and share power at various levels and among a large group of people, which leads into a discussion of polycentric governance.

13.4.5 Network Governance—Polycentricity and Broad Participation

The promotion of polycentric governance and broad participation is resilience principles that are consistent with the tenets of cooperative network governance systems. Network governance is a core design principle of the cooperative governance system with participatory and distributed systems of governance viewed as superior to that of centralized, top-down (and more rigid) hierarchical structures. Novkovic and Miner (2015) underscore the resilience features of polycentricity and broad participation by stating that "all co-operatives should assess the opportunities to elevate their governance through the use of network

governance with multiple centres of decision-making and opportunities for engagement of members and other constituent groups" (p. 19).

Network governance will, when designed well, include (paraphrasing Novkovic & Miner, 2015): small independent basic units that also form part of the larger network, such as federations, industry networks, or solidarity networks; decisions that are made at the level closest to the basic unit (subsidiarity principle); multiple centers of control (polycentricity) in a nested structure and at various levels (e.g. boards, delegates, members, workers); participation of multiple stakeholders/constituents with control over their domain of expertise (e.g. workers councils; boards; delegates).

Drawing on Pirson and Turnbull (2011), Novkovic and McMahon (Chapter 2 in this volume) state that "human limitations necessitate a separation of governance powers through a variety of independent 'control centres' (multiple boards, in network governance), which operate as a system of checks and balances on organisational decision-making". Hierarchical command and control systems fail because of centralized power and the difficulty of managing complexity, pointing to the need for subsidiarity and polycentricity (Turnbull, 2002). Polycentricity is emphasized also in Allen (2014) in the author's discussion of democratic cooperative self-governance in the context of commonly held resources, based on the work of Vincent and Elinor Ostrom and their colleagues (Ostrom, 2010). Framing polycentricity as an advanced form of organizing, it is defined as "[m]any centres of authority, each acting concurrently and independently, sharing authority and responsibility for the results," leading to an "*un*-centralised" system that "creates the opportunities for self-governance that people in a self-governing society could experience in their daily life" (Allen, 2014, p. 244). Polycentricity, as a result, is the possibility for "independent, co-ordinated, and cooperative actions" that "enable choice, self-determination, adaptation, and innovation" (p. 256).

Beyond the resilience principle of polycentric governance, network governance in cooperatives is also synergistic with other resilience principles—e.g. connectivity, diversity, redundancy, learning, feedback, and participation. Lewis and Conaty (2012) add to this line of thinking

by stating that "[r]esilience thinking requires us to expand our democratic repertoires and decentralize authority to act more powerfully. We need multiply the ways and means by which people can experiment, participate, and extend their collective capacity to become more self-reliant" (p. 27). Thus, we link back to how *resilience thinking* is required, combined with the enabling (networked) structures, while also crucially enabling participatory and people-centered processes.

Linking to the last section on inter-cooperation, network governance structures are created both within a single cooperative and at the various levels across the cooperative system. The result being an impressive "plethora of overlapping mixes of governing structures that weave various interests into a dense web of cooperation and solidarity" (Lewis & Conaty, 2012, p. 262). We find deeply networked governance structures in some individual cooperatives and systems of cooperatives. Best known is Mondragon's federated network of worker and multi-stakeholder co-ops in the Basque Country of Spain (see Imaz et al., Chapter 10 in this volume). Networked governance often intuitively emerges and evolves in worker and multistakeholder cooperatives. We see other prominent elements of network governance when decision-making processes embrace the subsidiarity principle, such as with sociocracy (see McNamara, Chapter 5 in this volume). And, the bonds of a single apex board model of governance are broken where dual boards are required or normalized (usually a supervisory board supplementing a board of directors), or where an apex board is complemented by member councils and delegate structures. The common characteristics include the sharing of power among a larger group of members, and hence a wider and more diverse representation of perspectives.

13.5 Conclusion: Resilience Alignment to the Cooperative Model Is Not Enough

Organizations cannot insulate themselves from their context, a context that was at one time relatively simple and where externalizing social and environmental impacts was met with greater acceptance. Now, in a much faster-paced, globalized, and troubled world, individual organizations are

feeling the direct effects of a much broader context. This context is illustrative of the need for all organizations, including cooperatives, to bolster their resilience capacity and commit to delivering regenerative solutions to pressing and complex social, economic, and ecological problems.

The cooperative advantage in an uncertain present and future may stem from the enterprise model's alignment with existing resilience principles, as explored in the chapter. The cooperative organizational form is congruent or overlapping with many of the resilience principles, perhaps more so than other forms of business. As a result of this alignment, it is natural to assume that strong cooperatives (i.e. those that adhere deeply to the Identity Statement) will have a certain level of transformative resilience capacity due to the cooperative characteristics of complex purpose, embeddedness in place, member and community focus, long-term time planning and investment horizon, valuing multiple bottom lines, inter-cooperation, and broad stakeholder engagement. The strongest application of these characteristics results in future-ready enterprises that are supported by members willing to accept, lead, and act with an integrated SEE worldview; incorporating transformational resilience into long-term planning and intergenerational stewardship; and moving beyond vision to strategy and practice.

With an underlying purpose that is broader than that of investor-owned corporations, the cooperative model is predisposed to stretching beyond the (instrumental) business case logic. Governance of "known and controlled" factors, based on capable, smart, and informed business choices undoubtedly will continue to play a role, but a governance system based on rational direction setting and decision-making will not be sufficient to match the challenges of the twenty-first century. For cooperatives to excel amidst increasing uncertainty, unpredictable future states, and constant change, the resilience and complexity muscles must be a strong strand of cooperative governance DNA; they must be a mode of governance, not an add-on. The belief that cooperatives are suited to play a role in tackling unprecedented challenges must now be matched by cooperatives integrating complexity and systems thinking into their organizations, and retooling governance and management structures and processes accordingly.

That being said, a cooperative's success in adhering deeply to the enterprise model's framework and baseline characteristics is context specific. While the cooperative model has many relevant, aligned strengths with resilience, cooperatives in practice may or may not govern and manage well in the face of complexity. Cooperatives need to move quickly to build a complex SEE systems mindset and knowledge base within those persons tasked with governance and management roles. In other words, cooperatives must learn how to govern and manage amidst complexity, to be more resilient, to not repeat mistakes, and to learn from others.

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