

## Using sense of coherence to cultivate enabling conditions for social resilience

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### Summary

System stewards are seeking bottom-up approaches to foster informal institutions to enhance resilience in socio-technical-environmental systems in order to adaptively navigate the intractable challenges society face.

This paper discusses an approach to foster enabling conditions for resilience to emerge to predispose an essential service organisation towards general social resilience in support of resilient services delivery. The approach is based on collective sense of coherence, which is a predictor of general social resilience across scale. Someone with a high sense of coherence have a general tendency to conclude that the world is (i) comprehensible, (ii) that challenges are manageable, and (iii) meaningful to engage in (Antonovsky, 1987a). SOC can inform meso-level interventions on the institutional framework in an essential service organisation to enhance resilient service delivery.

### Keywords

Resilience of complex adaptive socio-technical system; sense of coherence; meso-level intervention; informal institutions

### Introduction

Society benefits from the service delivered by socio-technical-environmental systems. For example, ecosystem services, like pollination and soil regeneration sustain life, health and human well-being, while essential services, like water, electricity, and connectivity, sustain the modern way of life (Auerswald et al., 2006; Biggs et al., 2015). Resilience is an emergent outcome from complex adaptive systems and cannot be produced directly (Van der Merwe, 2019). Understanding how to increase the resilience of these complex adaptive systems is important. There is particular interest into enabling conditions that may predispose a STE system to resilient service delivery.

The context of this work is Eskom, the national state owned power utility in South Africa, which generate 90% of the electricity consumed in South Africa (Eskom, 2020). This essential service system is deeply entangled in technical, social, economic, environmental, and political aspects (Baker & Burton, 2017; Jaglin & Dubresson, 2016). Amidst chronic and acute challenges, the Eskom Resilience Team employs ambidextrous resilience building strategies and explores ways to adaptively strengthen general resilience.

This paper use collective sense of coherence (SOC) to inform social intervention strategies and enhance the social system's propensity/tendency towards general social resilience. People with a healthy SOC have a general orientation to conclude that the world is comprehensible, that challenges are manageable, and that it is meaningful for them to engage in these challenges (Antonovsky, 1998). Levels of SOC are influenced by general resistance resources or deficits during upbringing and is open to intervention (Idan et al., 2016; Mayer & Boness, 2011). This paper proposes meso-level interventions to improve collective sensemaking, collective meaning-making, agency and connectedness among employees charged with essential service delivery and emergency response to large incidents. Meso-level interventions shape the ecosystem in which organisations operate through institutional change (Cunningham & Jenal, 2016; Esser et al., 1996). In turn, institutions structure human interactions through formal rules and informal norms (North, 1991). This paper draws on literature with similar themes supplemented by practical ways practitioners can act in the system to stimulate collective SOC.

### Collective Sense of Coherence (SOC)

How people make sense of the world determines how they act (McDaniel & Driebe, 2005). Effective sense-making informs effective response and is critical for resilience (Casto, 2014; Dekker et al., 2008). Unfortunately sense-making can fail, and this momentary inability to cope with complexity can lead to disaster (Casto, 2014; Dekker et al., 2008; Weick, 1993). SOC is a general predictor of

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psychosocial resilience and of effective sense-making (Lindström & Eriksson, 2006; Van der Merwe et al., 2019).

SOC provide people with a general tendency to (i) make sense cognitively of unfamiliar situations; (ii) make sense instrumentally of how to access the resources required to cope and manage; and (iii) make sense emotionally of their motivation to act with meaning and purpose (Van der Merwe et al., 2019) (refer to Table 1). People with healthy levels of SOC has the propensity to cope with stress and act amidst challenges (Van der Merwe et al., 2019). Social groups with lower levels of SOC experience more fear, anxiety, and depression (Kimhi et al., 2020). SOC reflects an enduring general orientation to life and is a multi-level concept across temporal, spatial and organisational scales, applicable to individuals, families, communities, organisations and nations (Braun-Lewensohn, 2014; Braun-Lewensohn & Sagy, 2011; Eriksson & Lindström, 2005; Idan et al., 2016).

Table 1: Dimensions of Sense of Coherence

<b>Comprehensibility</b>	<b>Manageability</b>	<b>Meaningfulness</b>
Cognitive dimension	Instrumental dimension	Emotional dimension
People see the world as comprehensible if they conclude they understand what is happening around them (Harrop et al., 2006).	People perceive that the resources required to deal with the demands posed by the world are available through their social connectedness (Harrop et al., 2006).	People see challenges as meaningful if they have the motivation to invest time and effort into it (Bonacchi et al., 2012; Harrop et al., 2006). Meaningfulness/purpose is the strongest contributor to resilience.

**Multi-disciplinary perspectives on Sense of Coherence**

Antonovsky was a medical sociologist and formulated SOC after years of research among Holocaust survivors, and a realisation that researchers should not study the origin and progression of disease, but of health and strength instead (Antonovsky, 1979). SOC literature describe comprehensibility, manageability and meaningfulness (Antonovsky, 1987; Bauer & Jenny, 2016; Eriksson & Lindström, 2005; Harrop et al., 2006). We explore approaches to operationalise collective SOC from literature with the same three themes. Table 2 below provides a synthesis across these disciplinary perspectives that may inform approaches to build collective SOC.

Public Management aims to build community resilience, yet researchers found gaming of outcome-based performance management leads to unintended consequences detrimental to systems health (Knight et al., 2017; Lowe & Wilson, 2015). Investigations into Public Service practices in healthy systems noted the presence of people who identify themselves as systems stewards, namely people who look out for the health of the system (Lowe & Plimmer, 2019). Among other things, system stewards help others understand the system by (i) making the system visible, (ii) building relationships and trust, and (iii) establishing shared purpose.

Pedagogy research on dropout rates shows that (i) cognitive competencies are not enough to graduate from tertiary education. They concluded that (ii) interpersonal and (iii) intrapersonal competencies are essential for holistic student resilience (National Academies of Sciences Engineering and Medicine, 2017; Noonan & Gaumer Erickson, 2017). The University of Kansas developed a framework of required skills (Research Collaboration, n.d.). Examples in Table 2.

The Resilience Shift explores critical infrastructure resilience and sought to extract real-time leadership lessons from the crisis brought about by the global pandemic. They distilled insights from interviews with senior resilience leaders conducted every week for 16 weeks. They concluded there are three areas leaders need to attend to during a crisis: (i) a technical dimension, (ii) a societal dimension with strategies to lead people and society, and (iii) a personal dimension pertaining to internal leadership qualities (Willis & Nadkarny, 2020). Examples are listed in Table 2.

Table 2: A multi-disciplinary synthesis on how to promote collective Sense of Coherence

	<b>Comprehensibility</b>	<b>Manageability</b>	<b>Meaningfulness</b>
Role of change agents	System stewards contribute to sense-making in the system by making the system visible and this help people to see the world as comprehensible.	System stewards contribute to network weaving in the system by building relationships and trust and this helps people to see the challenges in the world as manageable.	System stewards contribute to meaning-making in the system by establishing shared purpose and this helps people to see their role in the world as meaningful.

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	<b>Comprehensibility</b>	<b>Manageability</b>	<b>Meaningfulness</b>
Skills to develop	Develop cognitive competencies, e.g. creative thinking, problem solving, and organization. Prepare leaders to perform technical leadership strategies under pressure, e.g. to understand and monitor a crisis, maintain operational functionality, and manage cash.	Develop interpersonal competencies e.g. teamwork, networking, and conflict management. Mentor leaders in strategies to lead people and society under pressure, e.g. to demonstrate care, build and sustain trust, and contain anxiety.	Develop intrapersonal competencies e.g. a growth mindset, self-regulation, and tenacity. Cultivate internal leadership qualities required under pressure, e.g. to be calm, reflect and learn as you go, assume authority, and then delegate it where it can do most good.

These ideas point to ways of thinking and acting to enhance collective SOC in a system.

**Strategies to build collective Sense of Coherence in Eskom**

The Enterprise Resilience team has adopted collective SOC as an approach to intervene in systems-level sensemaking and meaning-making for collective action across the electricity supply system. They see themselves as system stewards who act in the system with ambidexterity. How they do what they do is vital. What they do is top-down deployment of good practise, but how they do it is being consciously mindful of promoting collective SOC in the process. Practical ideas, summarised in Table 3, pertain to establishing preparedness, performing emergency response and extracting organisational learning from experience.

Table 3: Practical approaches to promote collective Sense of Coherence in the organisation

	<b>Comprehensibility</b>	<b>Manageability</b>	<b>Meaningfulness</b>
Preparedness	<ul style="list-style-type: none"> <li>• Employ participatory planning processes to compile business continuity and disaster plans</li> <li>• Identify a range of storm roles (also beyond explicit operational response roles) and make dependencies between roles and ICS structures explicit.</li> <li>• Appoint people into storm roles and expose them regularly to simulation exercises which include introspection on the sensemaking that happens.</li> <li>• Collectively determine response principles as guiding heuristics during response.</li> <li>• Foster shared mental models to enhance understanding of big picture.</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen social capital and social network connectivity for flow of information, resources and ideas across the network.</li> <li>• Clarify how information and resources flow in the Incident Command System (ICS).</li> <li>• Emphasise agency that individuals have / should develop in responding within the necessary governance constraints.</li> </ul>	<ul style="list-style-type: none"> <li>• Empower people with agency to act.</li> <li>• Clarify the purpose of storm roles in contributing to the overall response.</li> <li>• Foster commitment to a common purpose – considering multiple factors (including the safety of the society served, the safety and health of colleagues etc.).</li> <li>• Show the integrated nature of the power system for supporting services to recognise their contribution to operations.</li> </ul>
Response	<ul style="list-style-type: none"> <li>• Verbalise guiding heuristics.</li> <li>• Update situational awareness relative to shared mental models.</li> <li>• Acknowledge authority of storm roles.</li> </ul>	<ul style="list-style-type: none"> <li>• Focus integration conversations around ICS.</li> <li>• Draw on established networks to access resources required to cope.</li> </ul>	<ul style="list-style-type: none"> <li>• Acknowledge people involved in the heat of the action.</li> <li>• Remind those removed from operations of the contribution of their role to restoration.</li> </ul>
Learning	<ul style="list-style-type: none"> <li>• Review aspects of response that worked / failed during incidents to extract learning and update guiding heuristics.</li> <li>• Explicitly visualise and review shared mental models to grow mutual understanding.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate sufficiency of flow in support of response, strengthen connections, formalise new connections that emerged from actual incident.</li> </ul>	<ul style="list-style-type: none"> <li>• Following an incident issue a leadership communique to thank participants for their contribution to the response &amp; highlight how their effort supported the needs of external stakeholders.</li> </ul>

Empirical results reveal high levels of meaningfulness and low manageability in Eskom. Connectedness translates into manageability as levels of connectivity, trust and social capital in social networks enable information, resources and ideas to flow to where context demands. Systems with high levels of internal connectedness exhibits more control over its destiny (Holling, 2001).

The general culture of an organisation can enable or constrain resilience. A reductionist view of organisation and a Tayloristic approach to management may stifle resilience and affect collective SOC, even if employees have high levels of individual SOC in their personal capacity (Van der Merwe

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et al., 2019; Woltjer et al., 2015). Enabling informal institutions are essential to permit collective action for resilience (Van der Merwe et al., 2019).

### Conclusion

SOC reflects a general psychosocial tendency to survive and thrive amidst stressors. Collectively it reflects a quality of sense-making, connectedness, agency and meaning among people, which highlights the contribution of social considerations on resilience. SOC offers coping capacity and is an incentive to act amidst difficulty and disruption (Almedom et al., 2007; Eriksson, 2016; Van der Merwe et al., 2019).

Collective SOC may be seen as an emergent systems-level outcome, and offers system stewards meso-level approaches to influence informal institutions in an organisation to cultivate collective action for resilience. Although SOC provide general resistance resources in the face of stressor and challenges, it is not clear if it offers society adaptive and transformative capacities to deal with systemic problems. More work is required to explore meso-level interventions to enhance the system's propensity for collective SOC, as well as to confirm whether SOC enable adaptive and transformative capacity to deal with deeper systemic challenges.

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