Article

Seeing the Whole Together Through Relational Mapping: A Method for Engaging in Complex Systems Change

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Abstract

Complex global challenges cut across organizational and sectoral boundaries, increasing calls for holistic responses. Seeing the whole across diverse stakeholders is challenging for participants in complex systems, yet doing so is essential for engaging effectively in systems change. A promising new method known as relational mapping, based on relational coordination theory, has been used to facilitate complex systems change. Here, we propose that relational mapping can be applied to help participants (1) see the whole in relation to the parts, (2) share their explicit and tacit knowledge, (3) engage in dialogue across distinct perspectives supported by the map as a boundary object, (4) reduce the impact of power differences, and (5) prepare to co-design interventions from multiple perspectives. This paper presents an illustrative case of relational mapping in the context of public administration in a South Carolina community engaging in complex systems change. Our analysis suggests a set of boundary conditions for the success of relational mapping, including the willingness of participants to seek integrative solutions to a conflict or problem and facilitation that is attentive to differential power and status among stakeholders. We conclude that relational mapping is a powerful, theoretically grounded method that enables the visual assessment of multilevel stakeholder relationships, preparing participants to engage in complex systems change and then present a template for use of relational mapping more broadly.

Keywords

organizational change/development, relational coordination, stakeholder analysis, public administration generally, administration/citizen relations

Introduction

In a world facing complex challenges such as pandemics, authoritarianism, social injustice, and climate change, calls for holistic responses are increasing (e.g., Bartunek, 2022; Clarke et al., 2020; Zheng, 2020). There is growing recognition that collaboration among diverse stakeholders is essential for addressing challenges that cut across organizational and sectoral boundaries (Crosby & Bryson, 2018; Head & Alford, 2015; Pavez et al., 2022). Diverse stakeholders may include public agencies and departments, nonprofit organizations, businesses, and other community groups. Stakeholders are often engaged in organizational change efforts, including changes to policies, practices, and information-sharing mechanisms (Mizrahi et al., 2013; Van Eyk & Baum, 2002). Further, changes often span stakeholders with varying goals, missions, structures, and agendas (Keyton et al., 2008).

These stakeholders often have a history of distrust—for example, between police and community organizations (Gebo & Bond, 2022a)—making collaboration more challenging. While contentious relationships among organizational collaborators can negatively impact progress and outcomes (Lewis et al., 2010; Wandersman & Florin, 2003), robust relationships have been shown to positively impact progress and outcomes (Bryson et al., 2015; Gebo & Bond, 2022b). Overcoming these challenges requires collaborators to be attentive to strengthening the networks connecting them while both differentiating and integrating the interests of individual organizations (Mandell, 1994; Provan & Milward, 1989).

Relationally-focused conceptual and practical frameworks are needed to address such challenges, and relational

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coordination is one such framework that has received considerable research attention. Relational coordination theory conceptualizes coordination as a process of communicating and relating among multiple stakeholders (Gittell, 2006). A recent meta-analysis demonstrated that, across 73 industries, the combination of high-quality relationships and communication among various roles and professions predicts a range of positive outcomes such as quality and safety, financial and efficiency, well-being, engagement and learning and innovation (Bolton et al., 2021). Relational coordination has also informed collaborative practices through a technique called relational mapping (Gittell, 2016) which was developed as a practical embodiment of relational coordination theory to help participants navigate challenges and more successfully engage in complex systems change (2016). Practically, relational mapping participants create a network map depicting the quality of relationships and communication among their roles. By understanding the strengths and weaknesses of their inter-role relationships, relational mapping participants can go on to collaboratively design interventions to improve their relationships and the state of the whole system (e.g., Purdy et al., 2020).

Relational mapping has been used primarily in health systems (Gittell, 2016), with no formal evaluation thus far. As the first evaluation of relational mapping, this paper highlights the mechanisms that make relational mapping effective and demonstrates how relational mapping can be applied within the field of public administration and more broadly to help participants see and manage interdependencies in complex systems. Based on direct observations of relational mapping in a South Carolina community, we propose that relational mapping is a promising method that can help participants to (1) see the whole in relation to the parts, (2) become aware of their explicit and tacit knowledge, (3) engage in dialogue across their distinct perspectives, (4) reduce the impact of power differences, and (5) prepare to co-design interventions from multiple perspectives. Our analysis suggests a set of boundary conditions for the success of relational mapping, including the willingness of participants to seek integrative solutions to a conflict or problem and facilitation that is attentive to differential power and status among stakeholders. We conclude with implications for further development of relational mapping and with a template to help participants facilitate relational mapping. These insights provide conceptual foundations for scholars to assess participatory visualization techniques and make such techniques more accessible to practitioners.

Relational Coordination as a Theory of Complex Systems Change

Understanding the dynamics in complex systems is a first step toward exploring new methods for intervening in those systems (Rousseau, 1985; Smets et al., 2012; Smith et al., 1995). Complex systems are systems "comprised of numerous interacting identities (parts), each of which is behaving in its local context according to some rule(s), law(s) or force(s)" (Maguire & McKelvey, 1999, p. 26). Change efforts in complex systems rely on multi-stakeholder relationships at every level, spanning intra and interpersonal, cross-functional, organizational, cross-organizational, and institutional (Gittell & Stephens, 2019). The resources and know-how needed to drive change across multiple stakeholders include understanding how the parts relate to the whole, recognizing both explicit and tacit knowledge, engaging in dialogue across different perspectives, mitigating the impact of power differences, and co-designing interventions informed by diverse viewpoints.

Relational coordination provides a theory of complex systems change, starting with the proposition that effective coordination requires the management of interdependence not only among tasks (Malone & Crowston, 1994) but also among the stakeholders who perform those tasks (Gittell, 2006, 2016). Relational coordination is defined as a mutually reinforcing process of communicating and relating for the purpose of task integration (Gittell, 2002a). Relational coordination is composed of three distinct dimensions of "high-quality relationships," shared goals, shared knowledge, and mutual respect, (e.g., Carmeli & Gittell, 2009) and four distinct dimensions of "high-quality communication," frequent, timely, accurate, and problem-solving (Gittell, 2006). First developed and tested in the airline industry, relational coordination theory demonstrates how working relationships impact performance outcomes for better or worse (Bolton et al., 2021). The theory has since been tested in multiple industries and is associated with a range of desirable outcomes, including financial and efficiency outcomes, quality and safety outcomes, well-being, client engagement, and learning and innovation (Bolton et al., 2021). Central to the theory is a measurable construct consisting of the seven dimensions, which represent a dynamic process through which diverse stakeholders can coordinate their tasks, enabling them to achieve their desired outcomes more readily than they can achieve on their own (Bolton et al., 2021).

Similar to other relational theories of coordination (e.g., Bechky, 2006; Kellogg et al., 2006; Quinn & Dutton, 2005; Stephens, 2021), relational coordination theory conceptualizes coordination as a process of communicating and relating among multiple stakeholders (Gittell, 2006). To coordinate a complex system effectively, participants need to act from the perspective of the whole system rather than the perspective of only their particular agency or entity (Gittell, 2016). Follett's (1949) focus on seeing the whole in relationship to the parts is foundational for relational coordination theory:

> It is impossible … to work most effectively at coordination until you have made up your mind where you stand philosophically in

> regard to the relation of parts to wholes. We have spoken of the relation of departments—sales and production, advertising, and financial—to each other, but the most profound truth that philosophy has ever given us concerns not only the relation of parts but the relation of parts to the whole, not to a stationary whole, but to a whole a-making (p. 91).

Follett's theory of integration describes the benefit of resolving differences through integration rather than compromise or domination, facilitated by the ability of participants to see the relationship of parts to wholes (Follett, 2011). Rather than solutions that reflect the desires of one party at the expense of the others (domination), or solutions that reflect the partial desires of each party (compromise), integration seeks to find unexpected solutions that meet the underlying desires of all parties by looking together at the whole situation.

Building on relational coordination theory and Follett's theory of integration, the relational model of change (Figure 1) proposes that collective outcomes can be achieved by strengthening relational coordination, as depicted in the center box, through a combination of relational, work process and structural interventions (Gittell, 2016). Change impacts and is impacted by participants' cognitive or interpretive frameworks and emotions (e.g., Bartunek, 1984; Huy, 2002; Stephens, 2021). **Relational interventions** such as relational mapping and conversations of interdependence help participants to shift their cognitive or interpretive frameworks, see themselves as part of a larger system, assess existing relationships, and take action from a system perspective (e.g., Gebo & Bond, 2022b; Hajjar et al., 2020; House et al., 2023; Thygeson et al., 2021). In making these shifts, Follett reminds us that there will be conflicting as well as common interests. Indeed, she stated that "… friction is good: the mechanical engineer capitalizes on friction, the music of the violin we get by friction" (Metcalf & Urwick, 2004, p. 31). The point is not just to manage or overcome conflict, but to work with it as an essential part of the integrative process.

Sustainable change typically does not occur through a one-time shift; it more often occurs through an iterative process (Tsoukas & Chia, 2002). **Work process interventions** help participants to engage in experimentation together, using collaborative methods to iteratively understand the current state, identify the desired state, and experiment to close the gap (Gittell, 2016). While methods of continuous improvement such as total quality management, lean and six sigma are often portrayed as highly technical, they depend heavily on the development of shared goals, shared knowledge and mutual respect (Baker et al., 2016; Cutcher-Gershenfeld et al., 2015; Deming, 1986; Gittell, 2016; McMackin & Flood, 2019).

There are also structural barriers to integration such as incentives that reward individual self-interest over collective interests (Olson, 1965), a barrier known as the "tragedy of the commons," where free riders enjoy the benefits of the whole without sharing the costs (Hardin, 1968). Ostrom (1990) identified design principles to solve common pool resource

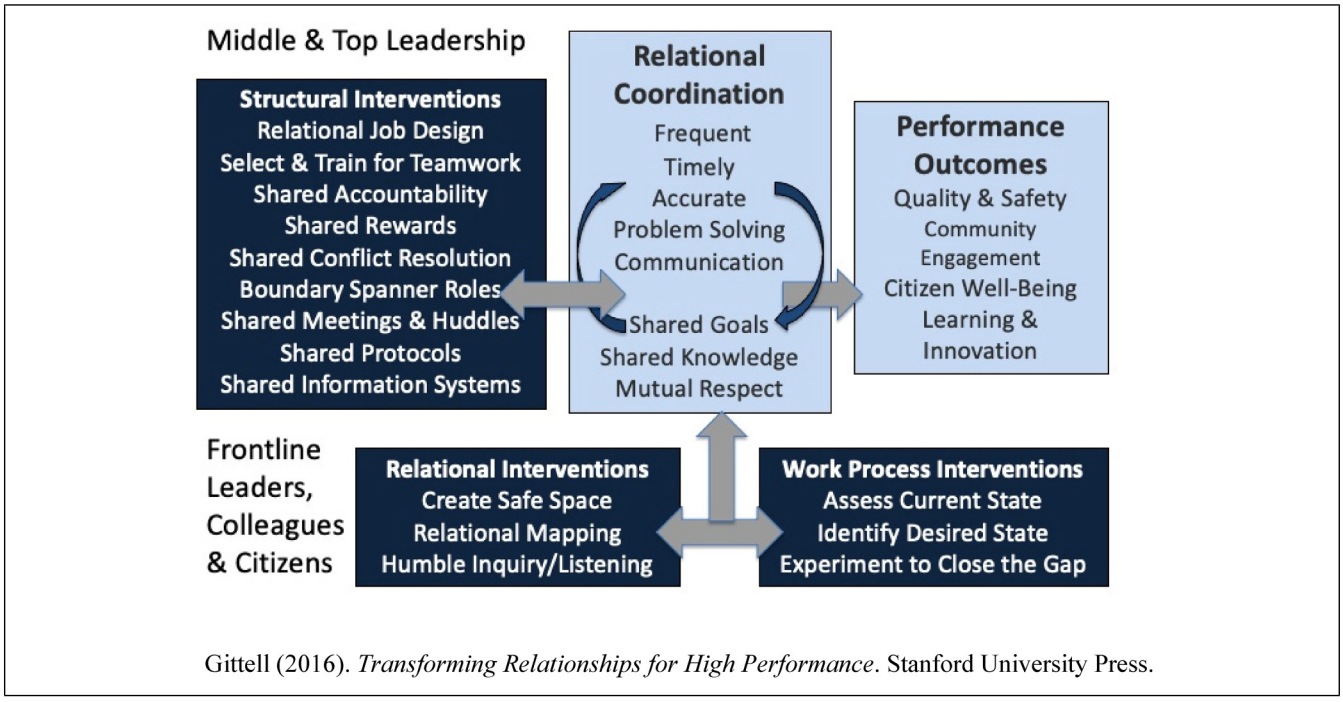

Figure 1. Relational model of change. Gittell (2016). *Transforming Relationships for High Performance*. Stanford University Press.

problems without resorting to hierarchy. Building on Ostrom and organization design theory (Daft & Lengel, 1986; Tushman & Nadler, 1978), relational coordination theory conceptualizes horizontal structures as essential for supporting and sustaining relational coordination (Gittell, 2000, 2002a, 2002b; Gittell et al., 2010). **Structural interventions** such as shared meetings, shared accountability, shared rewards, boundary spanner roles, relational job design, shared conflict resolution systems, shared protocols, and shared information systems can be designed to support new patterns of communicating and relating and thereby to increase their scalability, replicability, and sustainability over time (e.g., Bartel & Rockmann, 2024; Gebo & Bond, 2022a; Gittell & Douglass, 2012; Klindt et al., 2023).

In the context of the relational model of change, relational mapping is a relational intervention that uses visualization to help participants shift cognitive frameworks, see themselves as part of a system, assess existing relationships and take action from a systems perspective.

Relational Mapping as a Method for Facilitating Change

Public policymakers, managers, and change agents have increasingly relied on visualization methods in facilitated group settings to engage stakeholders in organizational change efforts (Bryson, 2004; Bryson & Anderson, 2000; Bryson et al., 2016; The Stakeholder Alignment Collaborative, 2025). These methods offer structured processes for engaging multiple stakeholders to problem-solve, identify shared interests and points of influence, and participate in the planning, implementation, and execution of shared work. For example, public management practitioners have utilized methods such as power-versus-interest grids and stakeholder influence diagrams (Eden & Ackermann, 1998) to illustrate power imbalances and clusters of influence among stakeholders visually and to map intersections among stakeholders' core goals (Eden & Ackermann, 2021). These tools help organizational leaders prioritize engagement strategies. Another example is stakeholder alignment which focuses on each stakeholder's substantive issues "at stake" (The Stakeholder Alignment Collaborative, 2022) to help participants identify points of alignment and misalignment that characterize multi-stakeholder initiatives and consortia (Knight et al., 2015; The Stakeholder Alignment Collaborative, 2025). While these methods hold their own merit for managing stakeholder dynamics, they do not delve as deeply into the quality of relating and communicating as relational mapping does.

Relational mapping differentiates itself from other visualization methods due to its theory driven approach which explicitly focuses on the seven dimensions of relational coordination, a framework increasingly supported by research (Bolton et al., 2021). With an emphasis on developing a shared perspective among participants through co-creating a visual object, relational mapping engages participants to assess the quality of relationships (shared goals, shared knowledge, and mutual respect) and communication (frequent, timely, accurate, and problem-solving) among the various roles in the system. These seven dimensions of relational coordination help diverse stakeholders in a complex system create a network map depicting the quality of relational coordination within and between their roles. Based on the quality of relational coordination, participants engage in constructive dialogue to identify underlying causes (e.g., lack of shared knowledge, blaming vs. problem-solving communication), opportunities for change, and to determine how to move forward together. In sum, the seven dimensions of relational coordination give participants more options for diagnosing and ideating key attributes among the stakeholders and more guidance when developing interventions.

The mapping process plays out in the following sequence: First, participants identify the relevant roles within their particular system and place labels for each one in a circle. For example, for a community youth violence initiative, key roles might include youth, social workers, police, community organizations, local government agencies, schools, behavioral health providers, and family members. Then, guided by the seven dimensions of relational coordination theory, participants collectively assess the strength of relational coordination within and between these roles. Figure 2 depicts stakeholders engaging in relational mapping of a complex multi-stakeholder system.

From their differing perspectives, participants draw lines between the circles, using colors to represent the current strength of relational coordination within and between roles —red to indicate weak, blue to indicate moderate, and green to indicate strong relational coordination. While assessments of relational coordination may differ from one stakeholder to the next or serve simply as an approximate evaluation, mapping allows participants to visualize the web of interdependent relationships in the system and engage in a more nuanced dialogue about the current quality of communication and relationships within and across roles. Participants are then invited to reflect on the map as a whole as they note patterns of weak, moderate, and strong ties,[1] consider underlying causes, identify opportunities for change, and determine how to move forward together. By constructing a relational map, long-standing institutional arrangements in public administration can be seen in new ways. Public and private parties whose interactions are inadequate to the task at hand may see opportunities for mutually beneficial work together. Stakeholders engaging in formal, arm's length arrangements may see value in forging closer, informal relationships.

Through these steps, relational mapping can enable participants to identify and strategize how to overcome impediments to effective systems change. By engaging in this

Figure 2. Relational mapping of a complex system.

simple technique, participants can more easily (1) see the whole in relation to the parts, (2) become aware of their explicit and tacit knowledge, (3) engage in dialogue across distinct perspectives supported by the map as a boundary object, (4) reduce the impact of power differences, and (5) be prepared to co-design interventions from multiple perspectives. The following sections explore each of these competencies.

See the Whole in Relation to the Parts

Complex systems include multiple stakeholders, each of whom understands their individual part of the whole system relatively well. While the boundaries of a given system are always in question when relational mapping occurs, just as any form of mapping must address the question of boundaries, these boundaries can be set in advance by those who invite others to engage in mapping, or they can be negotiated real time by those who are engaged in the mapping. For example, in a group involved in mapping a health system, some may think of the health system as the hospital, and others may think of it as a community network in which the hospital is one key player. This difference in perspectives is very useful to articulate, and doing so helps to shift the perspectives of those who are engaged in the process. Participants might decide to map the hospital centric perspective on the system, while others map the community centric perspective on the system, then consider how one is embedded in the other.

Collectively visualizing the relationships *within and among* these parts allows participants, acting as representatives of their respective stakeholder groups, to appreciate, question, and problem-solve with attention to the whole system rather than attending only to their separate roles. Through such visualization, relational mapping—used either on its own or in combination with other simulation tools that allow participants to experience and engage with change through simulation (Meier & Ingerslev, 2023)—has the potential to be a powerful method for promoting systems thinking (Ackoff, 1994).

Become Aware of Both Explicit and Tacit Knowledge

The holistic, integrative knowledge needed to understand the interactions and interdependencies among system elements (Senge, 2006) has two dimensions: the *explicit* dimension of "knowing what" and the *tacit* dimension of "knowing how," where "neither is ever present without the other" (Polanyi, 1966, p. 7). Each part of a system—the stakeholders and their respective needs, problems, and superficial interests—is typically easy to know explicitly. Problematic elements that demand change will easily capture our attention

(Baumeister et al., 2001) and are, therefore, easier to know explicitly. It is far more challenging to access and articulate our tacit knowledge about the interrelation among the parts that together constitute a distinctive and whole system. Such tacit knowledge is less accessible because it is based on our non-conscious awareness of bodily sensations as we engage with our environments (Polanyi, 1966). This type of awareness is often "muted" in organizations (Taylor, 2002), making problem-solving a challenge (Stephens & Boland, 2015).

Tacit knowledge is fragile because "tacit knowing of a coherent entity relies on our awareness of the particulars of the entity for attending to it, and if we switch our attention to the particulars [themselves], this function of the particulars is canceled, and we lose sight of the entity to which we had attended" (Polanyi, 1966, p. 34). This sensory awareness, or indwelling, is essential for fully knowing a system since "our body is the only thing in the world [which we] experience always in terms of the world to which we are attending from our body" (p. 16). Accessing both dimensions of knowledge can thus require some assistance in accessing the bodily senses.

The relational mapping process and the coherent picture it produces provide such assistance. The relational mapping process and the map itself engage the bodily senses in drawing lines connecting stakeholders, specifying colors to denote relationship strength, and then viewing the map as a coherent picture of the system's state as a whole rather than of individual stakeholders. The map can, therefore, serve as a "boundary object" bridging diverse stakeholder domains (Bryson et al., 2016; Star & Griesemer, 1989) or may even become an "epistemic object" embodying what people do not yet know but are emotionally and socially engaged in discovering together (Nicolini et al., 2012, p. 614).

Engage in Dialogue Across Different Perspectives Facilitated by a Boundary Object

The visualization co-created through the mapping process can provide an anchor for dialogue among participants with different perspectives, bringing to life the system in a way that allows participants to see its broader strengths and weaknesses. Relational mapping facilitates collaboration and healthy communication across members of different epistemic communities' professional knowledge bases (e.g., Bechky, 2003; Carlile, 2002; Star, 2010); in this way, the relational map can be considered an "epistemic object" (Ewenstein & Whyte, 2009).

Epistemic objects are innately incomplete and open to modification, thus allowing participants from different roles and perspectives to co-create shared understandings of their complex work (Ewenstein & Whyte, 2009). Their incomplete nature creates "patterns of wanting," generating questions and thereby keeping individuals and groups engaged (Nicolini et al., 2012, pp. 618–619). This, in turn, can generate further engagement and collective obligation. In this way, relational mapping aligns with the social constructionist view of conversation as a vehicle for "making and inventing vs. finding and discovering" (Shotter, 1994, p. 11) and where "we create our sense of, and meanings about, our social surroundings and ourselves" (Cunliffe, 2008, p. 129). The map presents a "concrete physical representation of an identified issue" that can promote constructive dialogue (Wallerstein, 1993, p. 222). The visualization and dialogic processes allow relational mapping participants to co-create fuller knowledge of the complex system in which they work and to identify opportunities for change.

Reduce the Impact of Power Differences

Many complex systems include stakeholders who come to the table not only with their unique perspectives but also with different levels of status and power. Relational mapping has the potential to reduce the impact of power differences among participants by asking them to develop a consensus about the quality of their relationships with participants in other roles. Both parties involved in a particular role relationship are asked to assess the strength of relational coordination between their respective roles—an assessment upon which the two parties may agree or disagree. In this way, relational mapping reveals whether two parties experience their relationship differently—i.e., whether they have a non-reciprocal role relationship. The assessment allows for more constructive dialogue, focusing on roles rather than individuals in those roles. Although some parties may not initially see it in their interest to reduce the impact of power differences, constructive dialogue often reveals reciprocal interests such that some leveling will be seen as mutually beneficial. A boundary condition for relational mapping and other collaborative approaches discussed more fully later in this article is parties' willingness to even be in conversation with each other.

Prepare Participants to Co-design Interventions from Multiple Perspectives

Finally, by requiring participants to identify weak and strong relational coordination ties among stakeholders, relational mapping creates the basis for prioritizing actions, including co-designing interventions. After participants inquire, explore, and diagnose the capabilities of the multi-stakeholder system visualized in their map, they are prompted by a facilitator to ask, "What should we do now?" Based on the relational model of change, participants are asked to consider potential relational interventions. For example, stakeholders may engage in humble inquiry (Schein, 2013) or 'conversations of interdependence' (Suchman, 2013), where individuals ask questions of one

another such as, "What is it about what I do in my role that helps you to do you work? and/or "what is about what I do in my role that makes it challenging for you to do your work?" Participants may also identify work process interventions (such as the adoption of a process improvement methodology) or structural interventions (e.g., establishing shared meetings or huddles among key stakeholders or a new way of implementing shared accountability or shared rewards across key stakeholders) to support their shared work going forward.

Using Relational Mapping to Achieve Complex Systems Change: An Illustrative Case

To illustrate how relational mapping works in practice as an adaptable tool, we selected a coalition-building effort in a South Carolina community seeking to implement a multilevel, multi-stakeholder change effort to address the politically charged policy issues surrounding police-community relations. Funded through a Robert Wood Johnson Foundation grant, the primary goal of the coalition-building effort was to build a community where youth can thrive through effective community safety partnerships. To achieve their goals, leaders implemented a theory-informed approach, including relational coordination, to drive effective community change through collaboration. In 2018, the coalition consisted of 139 members representing 64 stakeholder groups within the community, including youth, parents/families, police, community supports (e.g., local nonprofit organizations), faith-based institutions, schools, local government, the criminal justice system (e.g., courts), city services (e.g., parks and recreation department, library), housing, healthcare, businesses, and state services.

Nearly 100 coalition members gathered that spring to participate in a community visioning day. The event's purpose was to bring diverse stakeholders together to discuss a vision for youth in the community and assess resources and relationships that could be leveraged to aid the process. The lead author of this paper was engaged in this project and invited to introduce community stakeholders to the theory of relational coordination and facilitate relational mapping. Participants engaged in a relational mapping exercise to better understand the strength of relationships and communication among stakeholders (Hajjar et. al., 2020). Represented stakeholder groups included local government leaders and agencies, community-based organizations, law enforcement, youths, residents, schools, and faith-based organizations.

To begin relational mapping, participants were organized at tables, with eight to ten individuals representing different community stakeholders seated at each table. The corresponding author facilitated the relational mapping exercise which was supported by experts from the South Carolina Collaborative for Race and Reconciliation, members of which were present at each table. The facilitator first introduced relational coordination theory with supporting research and data.

Next, each multi-stakeholder table was provided with chart paper and markers and asked to discuss and qualitatively assess the overall strength of relational coordination among each of the stakeholder groups servicing youth within the community (e.g., between police officers and at-risk youths, between schools and community providers, etc.). Individuals at each table began by identifying the stakeholder groups they communicate and coordinate with to deliver services to youth within the community. The mapping process required each table of participants to describe and visually illustrate the strength of relational coordination ties between the stakeholder groups identified by drawing colored lines (green for strong, blue for moderate, and red for weak) on their relational map. The result at each table was a visual object representing how the participants perceived the quality of relational coordination between stakeholder groups serving the city's youth. Once all groups had completed their maps, there was a facilitated debrief to identify and reflect on critical issues and relational dynamics experienced at each multi-stakeholder table. Figure 3 represents one of the relational maps created during the relational mapping session in South Carolina.

Qualitative notes from the facilitator and collaborators captured the group process at each table, including interactions among group members and participant reflections. Data were collected on participants' process of creating and presenting their relational maps, their analyses of opportunities and barriers to change, and their proposed solutions. The facilitator and collaborators also captured participants' insights and comments as they moved through the relational mapping process and in discussions at the end of the exercise.

We found that visualizing interdependencies between groups helped participants identify missing stakeholders at multiple levels. For example, several multi-stakeholder groups identified missing stakeholders based on their maps and explored potential contributions from these additional stakeholders. One participant asked, "Where are the mental health providers? This is an important need for youths in our community." In these instances, participants shared ideas for how coalition members could leverage stronger relational ties to engage other community members or groups who were not represented around the table but that should be included. The relational mapping process also exposed the lack of connections between some organizations and between different levels of the same organization. Due to their specific roles within their organizations, some actors (e.g., school principals or leaders of faith-based organizations) had the responsibility to participate as more than individuals. These points illustrate how relational mapping can help to identify previously overlooked stakeholders in a change process and highlight the importance of including

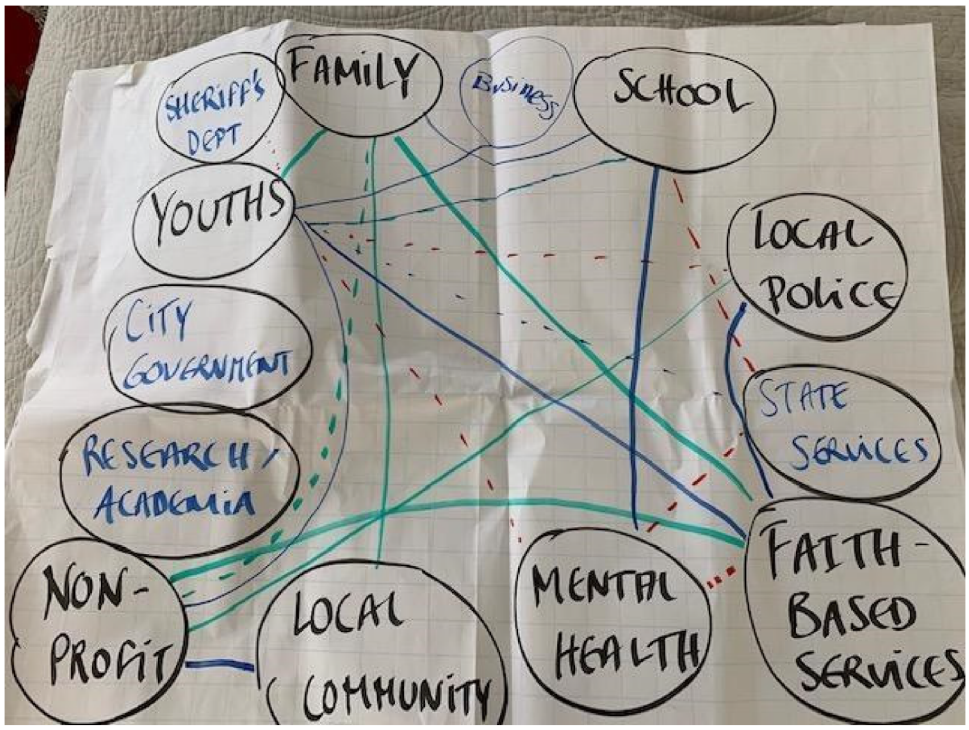

Figure 3. Participants identify additional stakeholders and explore relationships.

organizations involved at multiple levels (e.g., state agencies and community organizations) in such a process.

In assessing relational coordination among stakeholders, participants highlighted both strengths and weaknesses in the network. There was variation in the strength of relational ties between youths and schools and between parents and schools, with some reporting weaker ties between youths and teachers. Weak connections were reported between youths and law enforcement and between parents and law enforcement. There was variability in the strength of ties reported between faith-based organizations, non-profits, the library, community members, and parks and recreation. Mental health services were reportedly disconnected from other community stakeholders and identified as "missing," as noted above.

Assessing the strength of relational coordination also revealed race, culture, and social identity issues that can serve as barriers to achieving positive, sustainable change. Tacit, formerly unexpressed knowledge about the dynamics among different stakeholders and the larger context, emerged in several ways. For example, participants tended to answer questions about working with youth based on what they felt was important from the perspective of the particular stakeholder group they represented. Tensions arose when discussions turned to issues of trust and respect between historically marginalized (e.g., Black and Brown youths) and privileged populations (e.g., White police officers). One community member commented, "We can't talk about *building back* trust and respect [with the police] when it was never there to begin with. We have to start from scratch."

Participants also asked each other questions about what their respective group was collectively trying to achieve—highlighting how the overall objective may not have been clearly understood by everyone present—particularly when discussing why there may be weaker ties between specific stakeholders. These tacit insights, once made explicit, were addressed by proposing short-term goals centered around youth empowerment (e.g., creation of a Youth Advisory Council) and further exploring the variety of youth experiences and needs (e.g., developing stronger partnerships between schools, not-for-profits, and local businesses to provide employment and mentorship opportunities for youth). The underlying social and cultural factors identified during the assessment of tie strength were heeded, serving as the foundation for productive conversations to address these challenges collectively.

Importantly, we found that relational mapping enabled groups to simultaneously identify short- and long-term goals and interventions at micro, meso, and macro levels. Figure 4 conceptualizes strengths and opportunities identified by participants across multiple roles and levels. Micro-level change recommendations included connecting with youths and families, providing opportunities to understand the

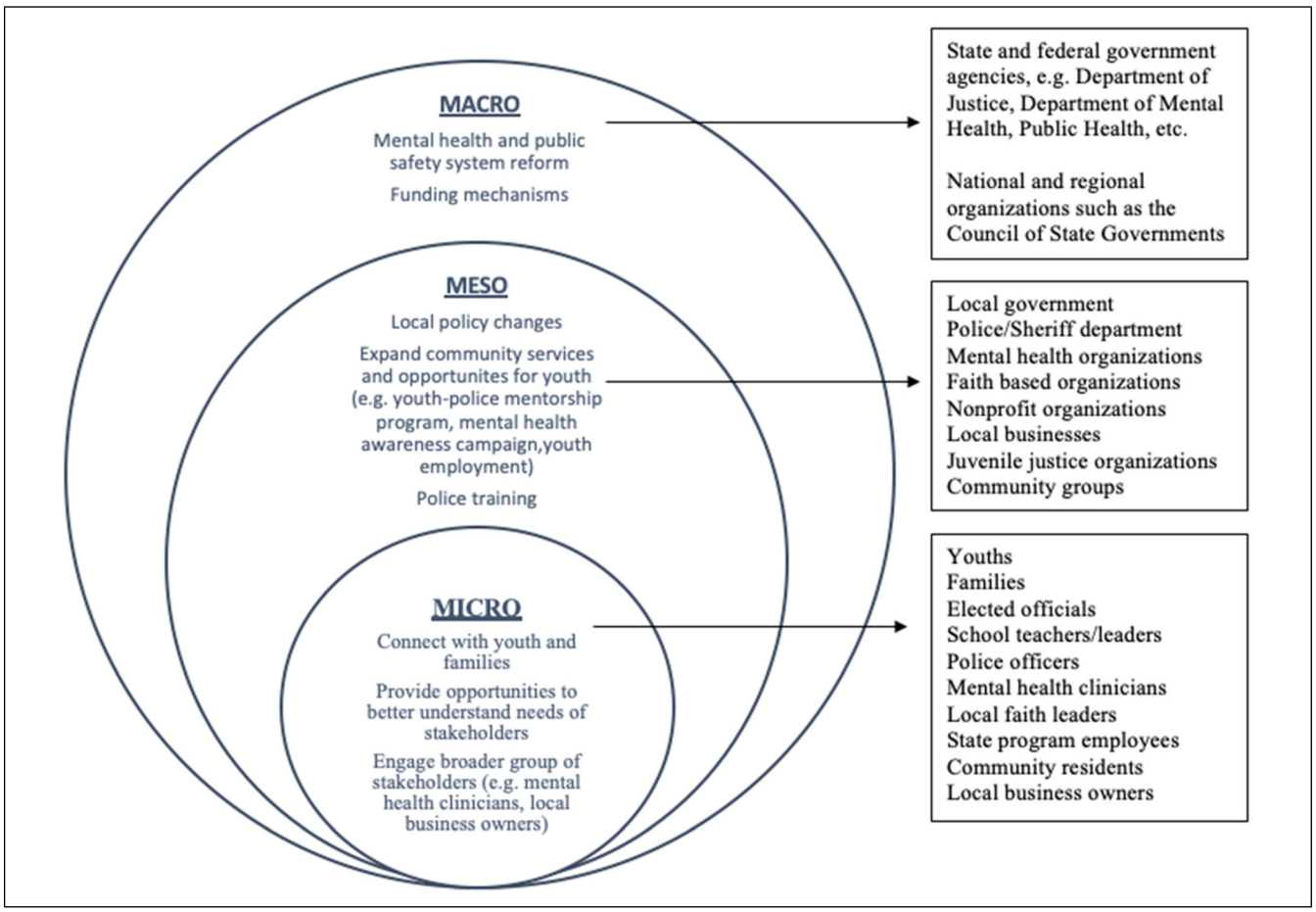

Figure 4. Strengths and opportunities for change across multiple roles at multiple levels.

needs of individual stakeholders better, and engaging a broader group of stakeholders, including mental health professionals. At the meso level, participants highlighted the need for local policy changes, expanding community services and opportunities for youth and police training. At the macro level, recommendations were made for more extensive systems reform, including public safety, mental health, and education.

Constructing a shared visual object through relational mapping also allowed participants to discuss multiple roles and perspectives simultaneously. For example, one youth representative provided important insights concerning power and equity dynamics. This individual was an exceptional student with big dreams and strong relationships with other stakeholder groups in the community, but they also had significant concerns about the future of youths in the community. During discussions, it was remarked that such students' strong relationships in the community and school did not represent most of their at-risk peers.

By focusing on the interdependencies and connections between roles, relational mapping participants could assess the strength of ties among multiple stakeholders, identify missing stakeholders, and co-design short- and long-term interventions across levels of their change initiative. Moving beyond individual differences and power dynamics allowed partners to engage in constructive dialogue and focus on the tasks and complexities of change needed to achieve the shared goals for youth within the community. The relational mapping process also fostered systems thinking by helping partners visualize how the multiple roles they were representing formed a whole system within which each role had the potential to affect the others, in both intended and unintended ways. In this way, relational mapping allows diverse groups to more deeply understand the explicit and tacit dimensions of the complex system in which they work.

Discussion

While our data is limited to one community, we see its insights transferring to other settings with similar features such as size and demographics. This case also represents

the first formal report and evaluation of relational mapping in a public administration context. As the case illustrates, relational mapping provides a theoretically based method for exploring—and expanding—our understanding of essential stakeholders within a complex system. More specifically, relational mapping helped participants in this system to (1) see the whole in relation to each of its parts, (2) share both their explicit and their tacit knowledge, (3) engage in dialogue across their distinct perspectives facilitated by the creation of a boundary object, (4) reduce the impact of power differences, and (5) co-design interventions from multiple perspectives. By visualizing interdependencies between groups, participants could identify missing stakeholders—individuals and agencies needed to achieve a safe and supportive community for youths but who were not yet coordinating with other stakeholders and not present at the mapping—at multiple levels. Participants' understanding of the relationships needed for cross-organizational coordination provided insights into the structures needed to support these relationships. Building on Gittell and Douglass (2012) and Klindt et al. (2024), this suggests that relationships and structures are not an either/or proposition but rather a both/and proposition for effective cross-organizational coordination.

Practical Implications for Public Management

This paper offers several practical implications for public administration employees and managers. Participants from diverse backgrounds and areas of expertise can use the relational mapping process to engage multiple stakeholders in complex change. In the case reported above, the mapping process focused on the participants' complex system to identify the changes needed to achieve mutually desired outcomes. Alternatively, the mapping process can be based on prepared cases (e.g., Hajjar et al., 2024) to simulate a change process rather than throwing participants directly into the fray of real-world complex system change. Participants benefit from some psychological detachment while also engaging with enough depth to grasp the goals and functions of the wider system as well as the interactions among its various elements.

Educators and consultants may also use relational mapping to provide participants (e.g., students, leaders, change agents, etc.) with a sound theoretical understanding of relational coordination theory and to provide them with the experience of using the theory in practice. To develop value for clients, public management consultants might use a relational map to identify the key stakeholders and the current system of relationships among them, thus providing a clearer picture of where to focus their efforts. By analyzing relationship and communication patterns—or even highlighting them as an area of inquiry—consultants may be sensitized to issues their clients face and may learn how to co-develop relational maps. Relational mapping may also be used as a training tool to facilitate collaborative behavior among public managers (Grøn et al., 2024), allowing participants to see more clearly the actual and desired qualities of the systems they work with and to design structural, work process, and relational interventions around those systems. A template has been created and attached in Appendix A to support broader use for facilitating relational mapping in-person, online, or hybrid formats.

Boundary Conditions for Relational Mapping

While relational mapping can be a valuable tool for facilitating complex systems change, there are challenges to implement it successfully, suggesting boundary conditions for its use. *Having the right people at the table* is critical, otherwise relational mapping is limited as a relational intervention for shifting how participants "see the whole" in relation to the parts. Challenges can arise when participants have differing views on who the relevant stakeholders are to include in a given change process, or when relevant stakeholders are unwilling or unable to participate. However, it is not necessary to have everyone present at the start. Relational mapping, consistent with the relational model of change, is an iterative process and engaging in it can be useful without every stakeholder being present in the room. Often engaging in mapping reveals to participants the relevance of stakeholders who were not previously seen as being relevant. For example, health system leaders may want to address community health but may feel it is out of scope to include landlords who impact the quality of housing, employers who impact the quality of jobs, or policymakers who can influence both. Thus, the first iteration of relational mapping may not include those parties, but through the process, participants may develop a realization that these external stakeholders are needed for the health system's goal of community health to be achieved. Additional tools to support stakeholder identification such as root cause analysis may be helpful.

The *willingness of participants to seek integrative solutions* is another limiting factor. As noted above, relational coordination theory and relational mapping as an embodiment of the theory build upon Follett's (2011) theory of integrative processes for constructively resolving conflicts. The alternatives to integrative conflict resolution are compromise and domination. Compromise means each party giving up part of what they really want, and domination means one party imposing its solution on the others, both of which result in suboptimal solutions. By contrast, integration means finding solutions that meet the underlying desires of all parties involved. The relational mapping process is designed to help stakeholders "see the whole together" in order to identify integrative solutions that are not otherwise apparent. However, many of us live in cultures where domination is far more common than integration. Follett argues that the love of domination is one of the biggest obstacles

to integrative solutions, and similarly, this love of domination may be one of the biggest obstacles to relational mapping. In many cases, she argues, it is more a matter of developing the skills to engage in integration. We have argued that relational mapping helps to do just that. For example, during the relational mapping exercise, community and law enforcement participants initially disagreed over responses to mental health challenges, leading to a discussion where participants shared personal stories and emotional experiences. This intense dialogue could have ended with each party striving to dominate the other based their sense of rightness. Instead, referencing the relational map, participants identified inadequate mental health resources and developed actionable solutions such as police training and improved support systems.

In addition, unarticulated or taken-for-granted *assumptions about race, sex, gender and other factors relating to social identity* can lead to stereotyping or social categorization during the relational mapping process that labels or exclude people in subtle but important ways. Building on the intersection of dialogic and interventional frameworks will be necessary for relational mapping to be more inclusive in its application. Drawing on the notion of "polyphony" (Bakhtin, 1986), facilitators must be mindful of elevating multiple voices across the mapping process to ensure full participation and leveraging of perspectives. Without polyphonous involvement, interventions that are lopsided in addressing the needs and interests of one or a few participants may be designed to the detriment of others. The responsibility to avoid or mitigate stereotyping resides with the facilitator. If assumptions or biases that reinforce social boundary drawing around issues of class, race, or social identity are not attended to by the facilitator, the relational mapping may solidify the social blind spots of some participants while alienating or even harming others. This risk is especially high if relational mapping is facilitated without specific attention to such important matters. In framing the mapping process, we suggest that facilitators bring this point to the participants' attention and clearly state how any such issues will be handled or invite them to develop their own process for addressing them.

The *inability to identify and account for all variables and relevant stakeholders* at a given point in time may also be a limiting factor for relational mapping. We acknowledge the rich literature on the boundedness of cognition, or "the systematic and ordinary psychological processes" that limits our capacity for taking in rich, complex information about our social environments (Chugh & Kern, 2016, p. 86). This is evident in highly-cited constructs such as bounded rationality, in which decision-makers have limited information, cognitive capacity and time to make decisions (Simon, 1957). It is also evident in bounded ethicality, where cognitive biases limit how ethical actors think they are or plan to be (Chugh et al., 2005). At the same time, scholars in psychology (Awh & Pashler, 2000) and philosophy (e.g., Nanay, 2016) point out our capacity to non-consciously distribute our attention across multiple, simultaneous elements of our environment. Management scholars (e.g., Ocasio, 2011) have also challenged us to consider the role of cognitive capacities broad enough to meaningfully shape organizational learning and change. The upshot is not so much that we are able to account for all variables or situational elements in a given point in time, but that, despite our limits, individuals are able meaningfully take in and act on enough information to navigate their social and institutional environments. In this way, the limits of human knowledge may be less of a problem given that relational mapping is a collective learning process. If people are open to learning from each other due to a common problem that they are intent on solving, their shared knowledge will develop over time.

Certainly, there are other internal (e.g., conflicting interests, needs and motivations, specialized expertise, etc.) and external (e.g., economic, political, social, etc.) factors that can affect the viability of any single framework for action and we do not claim that relational mapping can account for all of these factors. However, we do suggest relational mapping can be designed and carried out iteratively and dynamically, with attentiveness to both the social and technical aspects of a situation, and where one round of mapping can help to shift thinking in a way that is transferable to new issues and rounds of mapping as the situation evolves. Further, we propose that the material, visualized, and sensate nature of the map can provide enough of a common ground for the various stakeholders present to jointly transform their knowledge. The map enables those that construct, view and discuss it to have material "anchors" for integrating their knowledge of the system. The map can provide a 'tangible definition' of a complex issue, or at least, provide material space for examining the issue that allows or developing common ground in the midst of a division (Bechky, 2003).

Relational mapping builds on individual capacities because it brings together individual stakeholders with not-completely-limited perspectives and, in so doing, allows for a diversity of rich perspectives that can complement individual blind spots. Areas of consensus and disagreement can be productively aired through the facilitated discussion that emerges in generating the map. The point of relational mapping however is to provide a productive venue for articulating these disagreements and facilitating in a way that helps to shift perspectives towards seeing the whole together. If mapping is carried out iteratively and dynamically, and if listening is facilitated, then the insights gained through mapping can lead to agreements to include others in the process who now appear to be necessary to solve the problem at hand. In other words, the conversation can shift from "who has legitimacy to be included?" to "who is actually needed to solve this problem? "

Competing methods like work process mapping or asset mapping can be another limiting factor for relational

mapping. In many cases, these are complementary rather than competing methods. Research is needed to explore how other visualization methods mentioned above might be partnered with relational mapping. For example, while relational mapping assesses specific dimensions of relationship and communication quality among multiple stakeholders, stakeholder alignment centers on the issues "at stake" for the stakeholders (Stakeholder Alignment Collaborative, 2025). While some multi-stakeholder groups engage in relational mapping, others could be charged with producing a stakeholder alignment matrix with all stakeholders listed on one side of the matrix and the various interests that are at stake on the other. With relational mapping, recommendations focus on identifying and addressing gaps in the quality of communicating and relating among the stakeholders, including the degree to which they have shared goals, to build capacity for action. With stakeholder alignment, recommendations focus on identifying and advancing common interests and constructively addressing competing or conflicting interests to build alignment for action. This focus on substantive issues that are "at stake" typically leads to the launch or adjustment of multi-stakeholder consortia that act collectively on issues that would not otherwise advance sufficiently.

Another complementary rather than competing method is measuring the strength of ties on the relational map from the perspective of multiple participants in each stakeholder group using the relational coordination survey (Gittell & Ali, 2021; Valentine et al., 2015), a validated seven-question instrument based on the dimensions of relational coordination. The relational map created by a multi-stakeholder change team can be treated as a hypothesis to be tested by inviting a broader range of individuals from the stakeholder roles represented on the map to assess the quality of communicating and relating with each of the other roles using the survey. Results can be analyzed and then depicted visually in multiple forms, including relational maps and the strength of each of the seven dimensions within and between each stakeholder group. These results can be shared widely as the basis for facilitated discussion and sense-making and for developing relational, structural, and work process interventions guided by the relational model of change, then re-assessing over time for continuous improvement (Gittell, 2016; Gittell & Ali, 2021). While the relational coordination survey has been used extensively in research and practice, as shown in a recent systematic review (Bolton et al., 2021), and while relational mapping is often paired with the relational coordination survey in practice (see for example Thygeson et al., 2021), there has been no systematic research exploring the use of survey results together with mapping as the basis for complex systems change.

Relational coordination theory and the relational model of change suggest that structural interventions are likely to be needed to ensure that the desired relationships become embedded in everyday work. These new structures can be identified through relational mapping, aided by the Organizational Structures Assessment Tool (Gittell & Ali, 2021). But to implement these new structures, leadership support may be needed at levels that are higher than those involved in the mapping process. For example, mapping may reveal a breakdown in shared goals between key stakeholders, and further assessment may reveal competing accountability and/or reward structures between those stakeholders. Aligning accountability and rewards among these key stakeholders will often require changes in organizational policies, and may even require changes in public policies. Implementing these structural interventions is therefore a final limiting factor for the success of relational mapping.

Ultimately, engaging in complex systems change benefits from using multiple frameworks and methods. Relational mapping is a powerful, theoretically grounded method that enables the visual assessment of multi-level stakeholder relationships, preparing participants to engage in complex systems change. Use of this visual mapping method is an innovative intervention that helps parties to see the whole in new and generative ways and prepares participants to engage in much needed complex systems change.

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Note

1. In relational mapping, we refer to "weak", "moderate," and "strong" ties as related to the seven dimensions of relational coordination.

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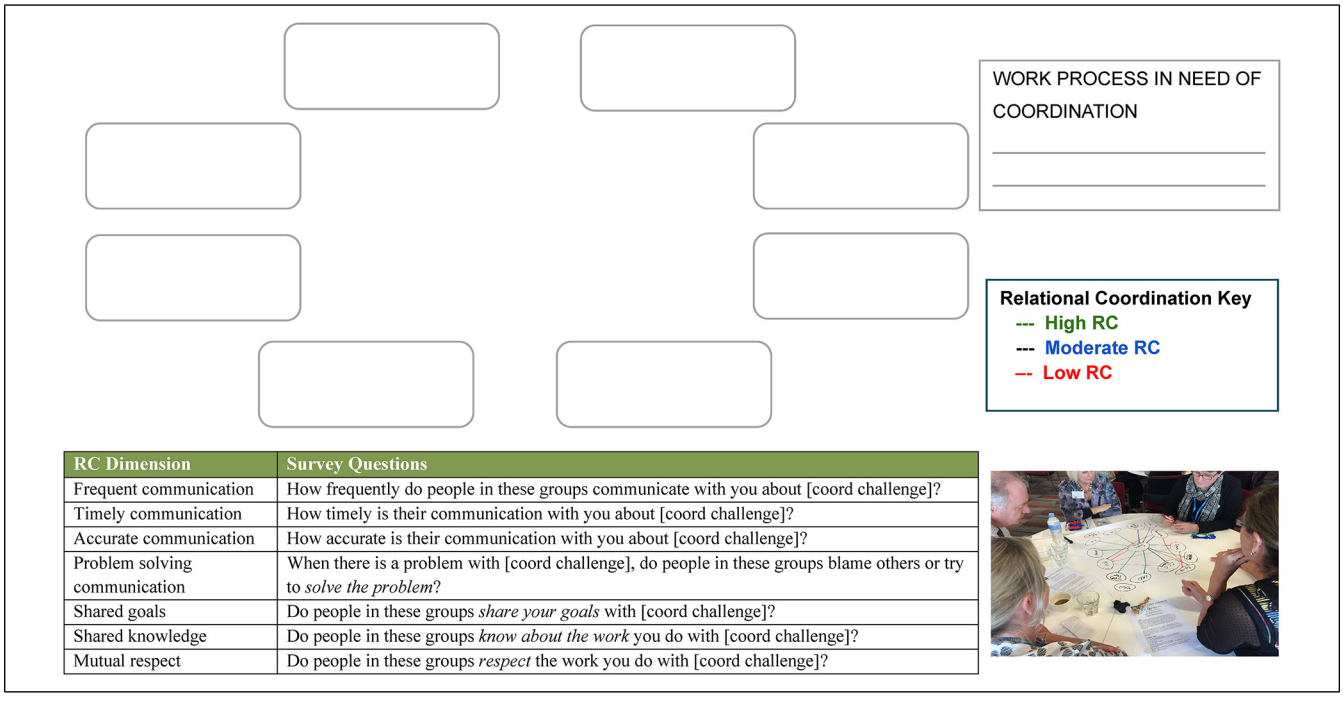
APPENDIX A: Relational Mapping – Learning About Complex Systems Change

Background

Relational mapping as a theoretically grounded method that helps participants see interdependence in any complex system, whether large or small. Relational mapping is used to assess interdependence and the current state of teamwork among roles in a particular work process. These roles include those that tend to be overlooked due to their relatively low status; roles that work in different locations or for different organizations; and roles that exist outside work organizations, such as clients and their families, friends and neighbors. Relational mapping offers a way to visualize and improve the relationships and communication among the people who do the work.

Educators and facilitators may use relational mapping to prepare participants to engage in change initiatives with a sound theoretical understanding of relational coordination theory and experience in using the theory in practice. To develop value for clients, consultants might use a relational map to identify the key stakeholders and the current system of relationships, thus providing a clearer picture of where to focus their efforts. By analyzing relationship and communication patterns – or even just highlighting them as an area of inquiry – consultants may be sensitized to the sequences and phases of workflows that their clients may face. By co-developing relational maps with their clients, consultants may become more mindful about their approach and may be able to see more clearly both the actual and desired qualities of the systems they are working with. The usefulness of relational mapping lies in its explicit focus on multiple, simultaneous role relationships and the co-creation of a shared visual object. Relational mapping is informed by the theory of relational coordination, summarized in a recent systematic review.



RC Dimension	Survey Questions
Frequent communication	How frequently do people in these groups communicate with you about [coord challenge]?
Timely communication	How timely is their communication with you about [coord challenge]?
Accurate communication	How accurate is their communication with you about [coord challenge]?
Problem solving communication	When there is a problem with [coord challenge], do people in these groups blame others or try to *solve the problem*?
Shared goals	Do people in these groups *share your goals* with [coord challenge]?
Shared knowledge	Do people in these groups *know about the work* you do with [coord challenge]?
Mutual respect	Do people in these groups *respect* the work you do with [coord challenge]?

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Relational mapping allows participants to visualize interdependencies between multiple stakeholders and organizations and thereby see each component as part of a whole system. Relational mapping often surfaces sensitive and unresolved team dynamics and can also serve as an impetus for change through the generation of new ideas, insights and strategies for addressing complex challenges. Participants take on the roles of various stakeholders and assess the strength of relational coordination within each role and between each dyad along the dimensions of shared goals, shared knowledge and mutual respect as well as the frequency, timeliness, accuracy, and problem-solving focus of their communication. Ties are assessed as weak (shown in red), moderate (shown in blue) or strong (shown in green).

Instructions

- Invite participants to form groups of 2 to 6, around tables or in breakout groups online.
- Invite one participant at each table to provide a live case, based on a challenge they are currently facing at work, or use a teaching case that all students have read.
- If working around tables, you can use flip chart paper, and red, blue, green markers.
- If working online (e.g., via Zoom), use this toolbox of resources.

Worksheet for Relational Mapping

What work process or challenge needs coordination? Which roles should be involved? How well are they currently coordinating?

Relational Coordination

Relational coordination (RC) is a mutually reinforcing process of communicating and relating for the purpose of task integration. RC is particularly useful when work is interdependent, uncertain and time constrained.

Relational Mapping

The Relational Map shows a bird's-eye view of the strength of ties within and between stakeholders.

1. Identify a work process that needs better coordination.
2. Which roles are involved? Fill in the circles on the map with the roles.
3. Color in the circle to indicate how well each role is coordinating with itself. Draw lines between the roles to show how well the roles are coordinating with each other. You can draw one line or two depending on whether the coordination is the same or different between the two roles. GREEN = HIGH RC, BLUE = MODERATE RC, RED = LOW RC

Assessing Current State

- Where is relational coordination currently working well? Where is it working poorly?
- How does this impact our outcomes?
- What are the underlying causes?
- Where are our biggest opportunities for change?