

Attending to Self-Organizing Systems in Cluster/Initiative Evaluation

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A cluster or initiative is often formed to stimulate or study complex change in social systems such as education, social service, health, or food systems. Most clusters have activities that are carefully planned to lead to pre-defined outcomes. The focus in the evaluation is typically on whether the activities led to predetermined desired outcomes.

At the same time we recognize that many aspects of the work of a cluster are unplanned and unpredictable. In an evaluation of a cluster, it is valuable to investigate these unplanned and unpredictable aspects of the work as well as the planned ones. Until recently we have not had many useful tools for doing so. Theories about complex adaptive systems and self-organizing systems provide ideas for approaching these aspects of a cluster/initiative. Here is background information that provides insights for this type of cluster/initiative evaluation.

A Framework for Looking at Social Systems

There are two general factors that researchers have identified as shaping how a system operates and how it is evaluated. These factors are the degree of (a) agreement and (b) certainty in the system. “Agreement” refers to agreement, for example, among those in a group, team, organization, or community about the fundamental principles which the system is built on and the activities the group engages in. “Certainty” refers to how predictably cause-and-effect relationships among actions, conditions, and consequences of actions can be identified. These factors determine the orderliness of the system and the consequent nature of decision-making¹.

At one end of the spectrum where the levels of certainty and agreement are high, we find **stable, organized, predictable systems** that can be modeled fairly well using cause-and-effect relationships. (*lower left corner of Figure 1*). At the other end, where systems exhibit both low certainty and low agreement, we find a **random, unorganized system**. In essence, the system has disintegrated (*upper right corner of Figure 1*). Between these two ends of the spectrum is a

Definitions

A **cluster** is a set of **projects** in different sites sharing a common mission, strategy, philosophy, and/or population that may be (a) implemented in varying ways and/or (b) have varying outcomes appropriate to local context.

An **initiative** has the features of a cluster but has a more advanced theory of system change and is funded for a longer term (e.g., up to 10 years). It may have more sites and/or more complex sites.

A **cluster/initiative evaluation** is a holistic evaluation involving multiple sites (most likely less than 30) that are part of a cluster or initiative. The cluster/initiative leaders desire a deeper understanding of the social change the cluster/initiative is designed to address.

A **project** evaluation is an evaluation of an individual site within the cluster/initiative.

¹ This way of viewing social systems and Figure 1 draw on the work of Ralph Stacey (1996) and Zimmerman, Lindberg, & Plsek (2001).

special dynamic. The system is far from the equilibrium of either an organized state or the disintegration of an unorganized state. These systems, which do not result from central control or intention, are said to **self organize** (*middle part of Figure 1*). Further, **the whole system being addressed is embedded in a larger social context**, with many other systems that may be affecting the system of interest (*represented by the circle around the diagram in Figure 1*).

These three variations in dynamics—organized, self-organizing, and unorganized—can be thought of as subsystems operating within a cluster. The three subsystems are extensively overlapping and entangled. However, viewing each of these subsystems separately can provide different insights into the nature of the work that can help stakeholders make choices about how to manage and/or participate in the work to move toward the desired results.

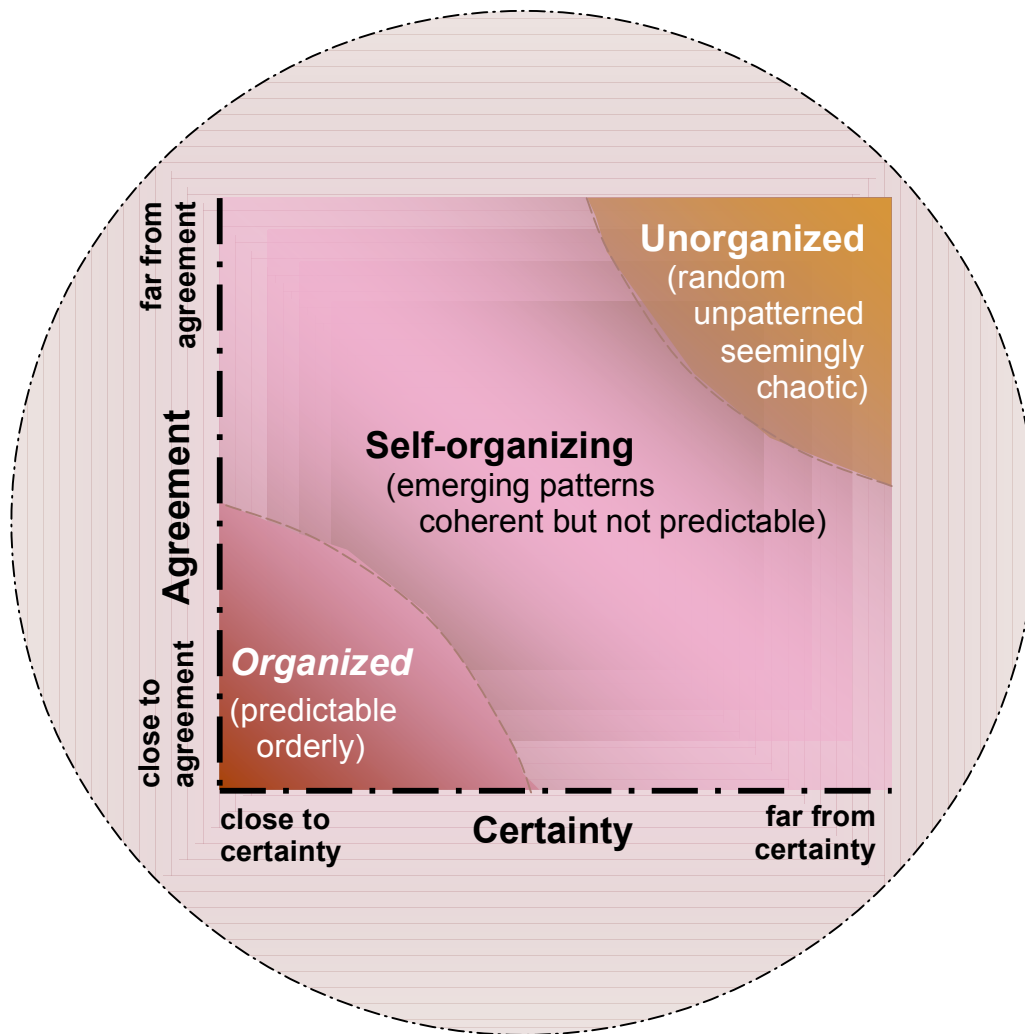


Figure 1. Three Subsystems of a Social System and its Context

When we focus on one dynamic, it is similar to wearing special glasses that selectively amplify certain colors or aspects of a landscape. When we put on different glasses and test them out, we

know that by doing so we have not changed the landscape itself but have allowed ourselves the possibility of experiencing the landscape in a different way.

Self-Organizing Systems

Self-organization is defined as the process “whereby new emergent structures, patterns and properties arise without being externally imposed on the system. Not controlled by a centralized, hierarchical command-and-control center, self-organization is usually distributed throughout a system” (Zimmerman, Lindberg, & Plsek, 2001, p. 270).

Self-organizing systems are examples of complex adaptive systems. A complex adaptive system consists of a large and diverse number of agents that interact in adaptive and nonlinear ways. In a densely intertwined web of interacting agents (e.g., subgroups, individuals), each agent is responding to other agents and the environment as a whole; it is continually adapting in the context of its relationships with other agents. The complexity of the systems prevents predictions using models based on a few variables as can be done in an organized system.

When a system is self-organizing, it exhibits properties that you might not expect. It doesn’t gradually move to being either stable or unstable. Rather it is continually in a state of disequilibrium. This is a state characterized by contradiction and contentions, simultaneous cooperation and competition, and the coexistence of interdependence and independence.

In self-organizing systems, there is no overall attempt to control the situation yet patterns emerge due to mutual adjustments among players; their deepening understanding of the philosophies and perspectives of the theory of change that they are seeking to put in place; and their response to changing conditions. Those involved may have a generally agreed-upon desired direction but movement in that direction is shaped largely by the self-motivation and independent and interdependent actions of the people or groups involved. Actions and patterns start to emerge over time as people keep adjusting to their situation and to one another’s actions with a direction in mind—much like drivers adjust to one another on a busy highway. Activities are not controlled or controllable by cluster or organizational leaders or others.

A primary purpose for addressing this area of a system is to understand what forces are at play that help build momentum in the direction of the desired outcomes that are not (or can not) be planned or controlled by leaders/managers. This information is especially important when thinking about the long term sustainability of the intentions and work of a cluster/initiative. When healthy self-organizing is occurring, it is an effective use of resources to help accelerate the movement in a natural direction even though it is unplanned or uncontrollable.

Conditions for Self-Organizing

All in all, four conditions of a system are valuable to consider when studying self-organizing units: boundaries, relationships, differences, and attractors. These conditions combine to create dynamic patterns. For example, there may be patterns of interactions among people within collaborations as they shift from dominant and subordinate relationships to seeing each other as equal but with different contributions to make.

- *Boundaries*: Self-organization and emergence occur within bounded regions. For example, the boundaries of a collaborative are defined by the role groups involved and the purpose of the collaborative. Boundaries need to be permeable to allow exchange between the system and its environment but also impermeable in terms of circumscribing what is in the system in contrast to its environment.
- *Relationships*: Connections and ways of relating among the agents in the system create the essence of a system. Without relationships, there is only an inert collection of parts.
- *Differences*: Differences of many types can create movement in the system. Differences in perspectives, for example, may create contradictions in a system that may lead to innovation or they may lead to unproductiveness. Look for differences that seem to matter.
- *Attractors*: An attractor is something that seems to underlie and attract how a system functions within a particular environment. For example, a desired result or money may create an attractor. When attractors change, the behavior and patterns in the system change. An attractor may be an equilibrium point or a periodic movement back and forth between two or more settings. An attractor in a highly complex situation may create a pattern where behaviors never repeat themselves but still a pattern (a fractal pattern) forms. For example, it may be a pattern of creativity and innovation.²

The focus in the analysis is on understanding patterns that seem to be emerging so this understanding can be fed back to those who are involved. Through the combination of many actors continually learning and adjusting spontaneously, new systems can emerge. The quality of this learning in human systems is very important because these far-from-equilibrium states also can lead to disasters and crises. This type of learning is risky yet essential to create changes that give a system long-term viability. Consequently we focus on how those involved in self-organizing change recognize that something new is emerging that is worth trying to stabilize and incorporate into the system.

Since certain patterns may only be evident by looking across several situations that are at different stages of development or taking somewhat different approaches, clusters of projects are an especially valuable source for understanding patterns in social systems.

Using Results from Studying Self-Organizing Systems

The understandings that come from an evaluation of self-organizing units is primarily fed back to those involved in the self-organizing units (e.g., collaborations) so they develop a deeper understanding of what to pay attention to as they continue to adjust to one another within their own situation.

The purpose of studying these situations is not necessarily to help those involved in change efforts to put specific conditions in place that are likely to lead to certain outcomes. Rather, the evaluation may well aim to help them contain their anxiety as they approach the tasks of (a)

² For more on attractors and other patterns see Eoyang (1997).

questioning deeply held beliefs, assumptions, or interpretations; (b) encouraging dialogue, discussion, and diversity; and (c) exploring alternative positions (Stacey, 2000, 2007; Parsons, in press).

All in all, by attending to the self-organizing aspects of a system, it allows one to balance planned and unplanned aspects of a cluster/initiative, describe the nature of the responsibility of the many actors more clearly, encourage creativity by helping people attend to diversity, and reduce people's anxiety about their work. All of these benefits lead to a greater likelihood of the underlying purpose of the cluster/initiative being sustained in a dynamic and healthy fashion.

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