

# Developing operating principles for systems change

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**Abstract** Based on an analysis of the articles in this special issue, the authors propose five operating principles for systems change work. These principles are: clarifying the purpose of the systems change; identifying whether the change is one to an existing system or the change is to create a new system; conceptualize the work as systems change from the beginning; use an eclectic approach; and be open to opportunities that emerge while also undertaking formal analysis to identify leverage points. The authors argue that the time is now ripe to develop such principles and encourage community change agents to engage in a dialogue to explore, revise, eliminate or expand on these principles.

**Keywords** Systems change · Systems change principles

The set of articles included in this special issue is illustrative of the tremendous breadth of topical areas in which systems change efforts are being undertaken—foster care, community policing, school food programs, comprehensive community initiatives focused on improving economic and education outcomes, positive youth development programs, African villages wrestling with HIV/AIDS, to name a few. In addition to the variety of topical areas, the change efforts are targeted at systems of vastly different scale and

complexity, from those focused on individual programs, units within organizations, and whole organizations to networks of organizations and whole communities.

Given the rich variety and breadth of topics and the scale of the systems, what methods, tools or conceptual frameworks seem particularly robust across change efforts? Are there some general principles we can derive about systems change work? While the sample size is admittedly small, we offer the following as some basic operating principles for systems change work.

## Clarify the purpose of the systems change

The purpose of the systems change effort shapes where the system boundaries are drawn and what intervention tools and methods are chosen.

While the reasons for engaging in systems change work are often not clearly articulated, those in this set of articles seem to fall into three broad categories: (1) achieving better and more sustainable programmatic outcomes (e.g., Janzen, Nelson, Hausfather, & Ochocka, 2007; Suarez-Balcazar et al., 2007), (2) achieving organizational or community level rather than programmatic outcomes (e.g., Campbell, Nair, & Maimane, 2007; Emshoff et al., 2007; Ford, 2007; Kreger, Brindis, Manuel, & Sassoubre, 2007), and (3) allocating resources more equitably in order to change outcomes for specific groups (e.g., Griffith et al., 2007; O'Connor, 2007; Staggs, White, Schewe, Davis, & Dill, 2007).

Drawing the system boundaries is particularly critical—and challenging—in work that aims to improve or sustain outcomes because boundaries determine who may benefit or suffer from the systems interventions and what resources are available for change efforts. Which

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individuals or groups are incorporated inside the system boundaries is determined by how the problem is defined; how the problem is defined determines which individuals or groups should be included in generating system solutions (Checkland, 1981).

In the Suarez-Balcazar example, defining the problem as the availability of nutritious food meant drawing the boundary around the school lunchroom to include the principal, teachers, health professionals, outside funders, and snack machine vendors in order to introduce healthier foods in the Chicago Public Schools. If the problem had been defined as lack of physical activity, for example, parents, youth groups, and civic leaders responsible for recreational opportunities might have been included. If the problem were broadly defined as childhood obesity, all of the above might have been convened. A critical challenge change agents face when drawing the system boundaries is defining the initial problem, and therefore the boundaries for intervention, in such a way that the scope is feasible, but wide enough that the system components needed to sustain outcomes are included.

Systems change work focused on organizational or community level outcomes needs to emphasize the interdependencies among system components. The processes used to bring large, loosely coupled system components into a greater and more clearly recognized interdependence are critical and different than the interventions needed in smaller or more highly integrated systems. Linking the system more tightly to itself is a powerful intervention, and community collaborations such as those described by Kreger et al. (2007) and Emshoff et al. (2007) can serve that role. The collaboration *processes* can reveal and reinforce, by providing explicit feedback, the relationships among system components. This feedback can become a key leverage point in a systems change endeavor.

Interventions targeted toward more socially just resource reallocations need tools that enable an understanding of the structures, relationships, and perspectives that reinforce the status quo. In a complex system the mechanisms that limit or reinforce behaviors may not be immediately apparent to a new observer. The use of tools that enable systematic analysis of these mechanisms may be useful to identify key system leverage points. Griffith et al. (2007), for example, use three different analytical tools to understand the multiple factors at play in creating disparities in health outcomes. Hirsch, Levine, and Miller (2007) and Foster-Fishman, Nowell, and Yang (2007) suggest system dynamics as a conceptual tool for understanding leverage points.

Clarity about the intended outcome of the systems change work should increase the likelihood that system boundaries are appropriately drawn and the most useful tools and methods will be used.

### **Identify whether the intervention is an effort to change an existing, well-defined system, or an effort to create a new system out of currently disorganized parts**

In a system-building intervention, the work of creating feedback mechanisms, specifying interdependencies and time delays, and identifying the overall shared purpose of the system must be consciously built in. The change efforts described in this set of articles fall into two broad categories—those seeking to change a system that already has some formal and/or legal sanction—and therefore a prescribed set of boundaries—and those that seek to create new systems out of entities that are currently not part of a formally sanctioned system. While the boundaries drawn for purposes of a systems change effort may not be isomorphic to the formally sanctioned boundaries, the formal boundaries create a container wherein the actors have a common purpose that creates a platform for the systems change work. In systems change that is really system building, the change process must include building the common understanding of purpose and then the interdependent processes (including feedback loops) that will create a functioning system.

One of the key strategies used in system *building* work is to create partnerships, teams, work groups, or other mechanisms that facilitate cooperation. However, there is still much to be learned about what these partnerships actually DO when they are meeting together that should be expected to lead to systems change. Tools or methods for building a shared sense of the system or the vision for the ultimate goals/outcomes are needed. Other fields are showing some promising new design tools that enable people from diverse background to come together—e.g., formal design processes such as charrettes<sup>1</sup> for urban design (Lennertz & Lutzenhiser, 2006) and rapid prototyping for product design (IDEO, 2007). Translating these design process into social system tools is one promising avenue.

In existing systems, individual or group training or awareness-raising focused on increasing understanding of the participant's role in the system may be one effective intervention. Several of the authors (e.g., Ford, 2007; Foster-Fishman et al., 2007; Griffith et al., 2007) point to changes in individual beliefs, conceptual frameworks, or attitudes as one tool for system change. Enabling system participants to see their role in the system can facilitate a changing of mindsets or mental models of “how things operate” (Senge, 1990).

<sup>1</sup> Charrettes are a rapid collaborative design process that is being implemented primarily by architects and urban planners to engage community members in planning major development. See <http://www.charretteinstitute.org>, for example.

### Conceptualize interventions as systems change at the beginning

The first step in systems change should be to use some tools that aid in understanding the “systemness” of the change target (Parsons, 2007).

Because of the nature of journal articles, it is very difficult to identify which of the efforts documented herein were actually conceptualized as system change work from the beginning. Almost any change effort can be seen as a systems change effort if one considers that any human activity takes place within some system. However, when is it actually productive to use formal systems thinking tools—which can be time-consuming and conceptually difficult? We posit that the frame of systems change is particularly valuable when the problem being addressed is a long-standing one. If repeated attempts to create change have failed, it is likely that a more formal systems analysis will provide useful insights. Another indication that systems thinking concepts might be helpful is when the work is focused on outcomes that are broader than an immediate impact on a specific group or population. For example, a systems analysis might not be necessary in implementing or evaluating an after-school tutoring program—but understanding why students are not participating might require it.

There are many schools of systems thinking available to assist in systems analysis. In the introductory article we described two (System Dynamics and Soft Systems Methodology) and Parsons (1997) introduces a third in her commentary (Complex Adaptive Systems theory) that seem particularly useful in appreciating the nature of

systems. However, there are a great many other schools of systems thinking, each of which offers a slightly different insight into system functioning. In Table 1 we summarize some of the systems theories that we believe could be particularly valuable for systems change endeavors that target human service delivery and community systems.

### Use an eclectic approach to systems change work

Approaching a change project as a systems change effort does not dictate a single set of tools that can or should be used in the intervention.

Williams (2006) provides an excellent overview of a variety of systems thinking tools and their advantages and disadvantages, particularly as they pertain to evaluation. Overall, there is a growing recognition in the systems world that hybrid models to systems change are the most effective.

### System change agents need to be open to opportunities that present themselves, while also undertaking a formal analytic process in order to maximize the power of these emergent leverage points

Identifying key leverage points within a system is both an analytic and an opportunistic process.

While leverage points may be identified through rigorous analysis (Foster-Fishman et al., 2007; Griffith et al., 2007), in practice, leverage points are often opportunistically identified. The availability of new funding

**Table 1** Overview of systems select systems approaches

Approach	Key features	Implications for systems change
System dynamics (Sterman, 2000)	Tool to help address complex issues involving delays, feedback and nonlinearities. Uses causal loop diagrams to model system behavior. Software tools available.	Makes visible how changes in one part of a system may have a delayed impact on other parts. Highlights intervention points (usually right before or after a delay).
Soft systems methodology (Checkland, 1981)	Seven-step process to highlight multiple views of a system. Begins with defining the system, then creating multiple models of it that can be compared with reality.	Highlights different purposes of a given system. Useful for surfacing tensions that arise from different views of the system.
Complex adaptive systems (Eoyang, 1997)	Framework that emphasizes interaction across unclear, changing, or permeable boundaries. System components interact as free agents; subsystems are massively entangled. Feedback enables adaptation. Three key components (container, differences, and exchanges) used to understand systems.	Useful when boundaries are fuzzy and when outcomes are long-term or unpredictable. Suggests importance of emergence, openness to unplanned change.
Cultural historical activity theory (Capper, Hill, & Wilson, 2003)	Focus on how people develop their understanding of the world; based on cognitive processes. Explores how seven basic propositions are applied in a given situation to construct meaning, learn from the meaning, and move to action.	Emphasize role of cognitive processes, how people think about the system as an important leverage point.

(Suarez-Balcazar et al., 2007; Staggs et al., 2007) or key leadership transitions (Ford, 2007) could create leverage opportunities that might not necessarily be the ones that would be identified through a purposeful systems analysis. This means that systems change agents may want to continuously scan the environment and targeted system, seeking opportunities that could create levers for systemic change.

In conclusion, these above principles were developed from a relatively small number of cases and systems change experiences. They need to be explored, revised, eliminated or expanded based on active dialogue drawing upon the experience of community psychologists and other involved in working to create better communities and organizations through systems change. Given the urgent call for transforming our communities and service delivery systems, the time appears to be ripe to emphasize this process and to create a broader and more disciplined science of systems change.

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