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Global Innovation for Impact Lab

GIIL 2020: Research vision for the next decade[1]

Exploring the Nexus of Organizations, Problems, and Systems

Christian Seelos and Johanna Mair
Directors, Global Innovation for Impact Lab

Three research streams will define our work in the next decade:

1. Problems and Systems: Effective assumptions about reality and causality
2. Intervening in Systems: Mechanisms of change by individuals, organizations, and coalitions
3. Scaffolding System Change: Structures that support and direct change efforts

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[1] For supporting documentation of this research strategy, see: Seelos (2020) System perspectives will slow us down and that's a good thing! GIIL working paper, available at: https://pacscenter.stanford.edu/publication/system-perspectives-will-slow-us-down-and-thats-a-good-thing/; for shorter versions see: Seelos & Mair (2018) Mastering System Change. Stanford Social Innovation Review (Fall 2018), available at: https://ssir.org/articles/entry/mastering_system_change; Seelos (2019) Changing Systems? Welcome to the Slow Movement. Stanford Social Innovation Review (Winter 2020), available at: https://ssir.org/articles/entry/how_to_tease_out_the_complex_dynamics_of_systems_change.

1. Problems and Systems: Effective assumptions about system architectures

Russell Ackoff, an influential system scholar, reminded us that efforts towards solving problems have often proven ineffective when they do not change the system that keeps recreating the problems of concern. Effective interventions in social problems may thus require a shift towards addressing the system in which the problem is embedded.
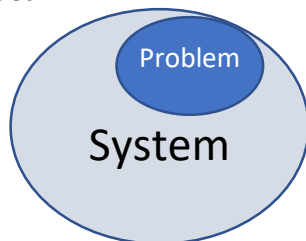
However, this distinction between problems and systems may not sufficiently capture aspects that we deem fundamental to effective system approaches. Systems are social architectures and three lenses help us capture this architecture:

i)   A **situation space**, the state of affairs in a situation of concern: What are the objective conditions that people find themselves in that offer opportunities but also impose constraints upon human beings? What are the dynamics of change of a situation?

ii)   A **problem space**, the subjective interpretation and evaluation of whether a situation is troubling and for whom: What is the nature and legitimacy of claims that a situation is a social problem that ought to be dealt with? How important is this problem compared with other "competing" problems and priorities and who benefits and who suffers most?

iii)   A **behavioral architecture**, the factors and forces at work that generate the characteristics of a situation: What are the economic, cognitive, normative and power and political factors that cause people to think and act in certain ways? How does this architecture create behavior that results in a specific situation and affects its dynamics of change?
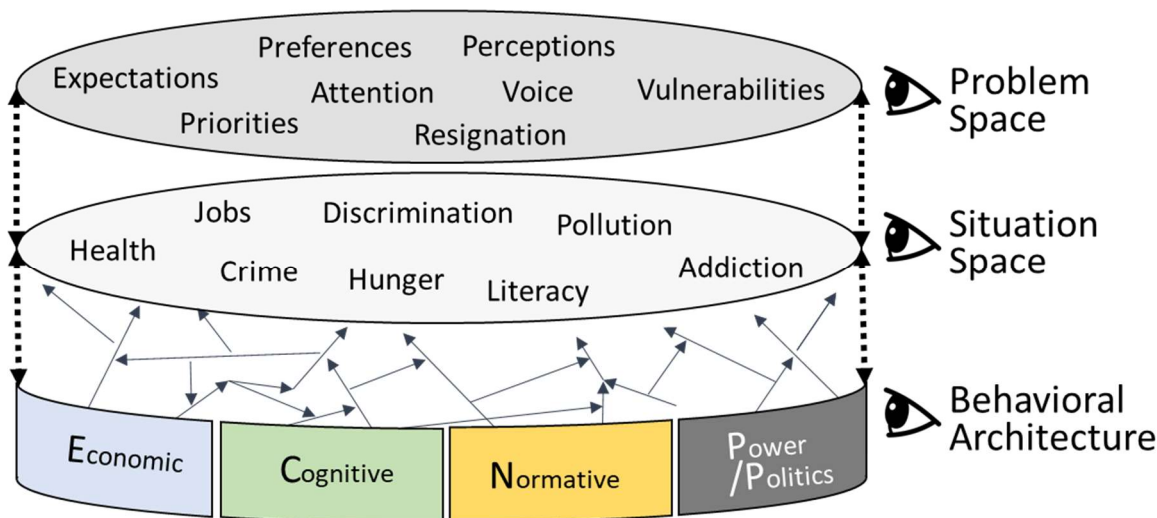
This system architecture comprises characteristics of system stakeholders, e.g. their levels of education, personal freedoms, economic abilities; the nature of stakeholder relations, e.g. norms and traditions that encourage and constrain behavior; the social, institutional, and material context that influences what stakeholders can and cannot do. Our systems research at GIIL starts with the premise that systems are social architectures that shape the behavior of individuals, groups, communities, societies and this behavior creates situations that are interpreted as "normal", "desirable", or "problematic".

For example, consider a system whose architecture comprises norms and traditions that prevent women from participating in economic activities. This social architecture together with mechanisms of punishing disobedience generate (are the cause of) situations of economic dependency, marginalization, and abuse of women. This situation is evaluated by stakeholders. Elites and men in such a system may consider this situation as "normal" and not constituting a problem. Women who suffer from this situation may be deeply troubled by this situation. External observers who were socialized in different contexts may also consider this situation a grave social problem that requires intervention. But how?

Effectively addressing social problems requires a reorganization of the architecture of systems. In our example, effectively eliminating the problem requires changing the norms and traditions from which communities operate. Merely shielding women from instances of abuse would only provide temporary relief: Eliminating the shield would restore the same problem situation because the system architecture has not changed.

In the next decade, GIIL intends to focus on several research dimensions to produce valid and practical knowledge around the relation of systems and problems and the implications for interventions and system change efforts:

1.1 How do entrepreneurs or organizations effectively enter systems to discover the system's architecture and dynamics of change?

In our research with social enterprises we synthesize from experiments in the field that show effective approaches to engage with the deeper architecture of systems; this effort includes an emphasis on the important unobservable characteristics that superficial system maps might miss: historical events that impact behavior today, norms, power-, dependency-, and abuse-structures etc.

1.2 How can we map the architecture of systems?

We are developing methods to specify the relation between problems and systems. Our intent is to develop tools that help decision makers map the characteristics and dynamics of this relation. Maps operate as learning devices that can be corrected over time to improve our understanding of specific problems and systems of concern. Valid maps that reflect reality rather than preconceived notions and subjective expectations inform interventions and help avoid the main sources of system change pathologies that might stifle our best efforts and intentions.

1.3 How do system stakeholders problematize their realities in different ways and what does this imply for intervention design?

Problems are often perpetuated by win-lose dynamics. A situation that benefits some stakeholders may disadvantage other stakeholders in the same system. A situation of persistent inequality is simultaneously a problem for those without power and a desirable reality for elites.

Whether a situation is perceived as problematic may also depend on subjective rationalities. High birth rates in poor communities may be perceived as problematic from a Western perspective. For parents in that system the birth rates are optimal to ensure financial support of aging parents without retirement income. Our research takes this subjectivity of systems serious because understanding the ways in which situations are problematized and by who have serious implications for intervention and solution design.

1.4 What are the main pathologies and errors that funders, entrepreneurs, and organizations make in specifying the relation between systems and problems?

At GIIL, we have started to identify the main sources of ineffective system approaches described in the literature and from our own empirical research. We categorize generic ineffective approaches in terms of "types of system change pathologies":

Type 1: (false positive) Diagnosing a problem that no one has/perceives – falsely rejecting the null hypothesis – focusing on the wrong problem/wrongly focusing on a non-problem

Type 2: (false negative) Diagnosing the absence of a problem when someone actually has/perceives a problem – falsely failing to reject the null hypothesis – failing to see a problem

Type 3: (wrong problem) Solving the wrong problem in a technically adequate manner – solving the wrong problem precisely – solution driven approaches

Type 4: (wrong solution) Solving the right problem in a technically inadequate manner and thus the side effects are worse than the problem – Type 4a: fast short-term focused impact driven approaches, you see the side effects too late because you attend to immediate concerns; Type 4b: sunk cost dynamics, you see the side effects but cannot stop

Type 5: (inaction) Identifying a problem but hoping that time will solve it/that the system will deal with it – hoping the problem will go away – delaying implementation of solutions until the problem worsens

Type 6: (unsubstantiated inference) Establishing causation based on narrow correlations w/o substantive observation and retroduction of causal mechanisms - wrongly inferring causation from correlation

Type 7: (system of errors) Pathologies 1 – 6 compound to create a larger more complex problem than initially encountered

Type 8: (getting stuck in extremes) Inadequate implementation of overly hard or overly critical system perspectives – letting ideology dominate pragmatism; Type 8a: implementing a hard system perspective grounded in Western engineering traditions characterized by predetermined goals set by external actors, resources external to the system, explicitly defined milestones and ex-ante prescribed action; generating pathological behavior such as "more of the same" or "focusing on overly narrow domains" to counter a lack of progress; Type 8b: implementing a critical systems perspective from an utopian empowerment logic that gets stuck in endless debates and considerations with little productive action.

Type 9: (illusion of competence) Large gap between ambitions and competencies - individuals or organizations can boost their intangible aspirations and ambitions (e.g. "big bets") much faster

than they can build the tangible competencies required to achieve these aspirations; the resulting mismatch between aspirations and competencies generates outcomes that do not fit ambitions; an increasing frustration with the lack of achievements tends to create several types of pathological behavior and declining levels of performance.

Type 10: (illusion of understanding) Mistaking observable aspects of systems for the system – superficial analysis and observation that (e.g. system maps with lots of boxes and arrows) generates a sense of understanding that fails to consider important aspects of a system's architecture

2. System intervention: Mechanisms of change by individuals, organizations, and coalitions

Systems are never in an equilibrium, they are always changing or resisting change in creative ways. In our research we find that system entrepreneurs and change leaders need to understand the organic dynamics of change as a prerequisite for effective intervention. Do systems slowly improve in an area of concern? Are they stuck in a trajectory that recreates the same problematic situations? Are systems in decline as when the severity of problems or the numbers of problems get worse over time?
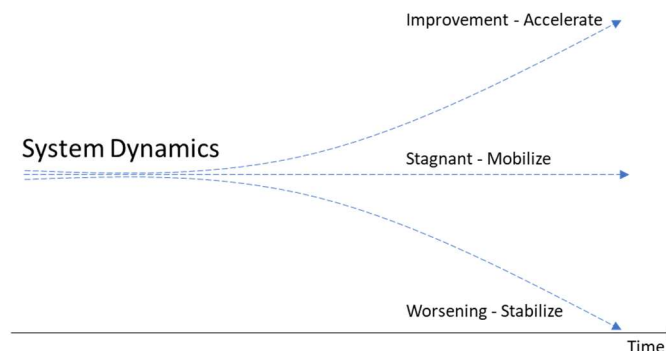
2.1. What do the different dynamics of system change imply for interventions?

Reflecting on system dynamics will inform the priorities for intervention design and the ways in which we engage with systems: Accelerating access of communities to opportunities offered by an improving economy requires different engagement practices than mobilizing a system for example by creating opportunities that are compatible with prevailing norms and traditions. Engaging with systems where problematic situations are worsening, for example due to conflict and aggression, may force us to withhold efforts towards system change or system transformation. Rather, we may need to find ways of stabilizing deteriorating systems, by slowing down the dynamics of change and by focusing on building trust and rapport, healing, and neutralizing constraints. In this area of research, we intend to characterize the implications of system change dynamics for intervention design.

2.2. What are effective mechanisms for intervening in specific types of problems/systems?

GIIL research has identified and characterized several change mechanisms. They include attractor mechanisms, subsystem isolation, and scaffolding. We will aspire to understand the contextual characteristics that make these mechanisms effective and the range of organizational or social structures and processes by which these mechanisms can be enacted effectively. We also intend to characterize other change mechanism archetypes and to define their applicability for hard- versus soft-system perspectives (see Seelos, 2019, SSIR).

2.3. How do we provide space for a system's self-reflection and give voice to marginalized system actors?

Recently, soft- and critical-system perspectives were developed by scholars out of frustration with the inadequacy of traditional hard system approaches to social systems and problems. The main challenge of this approach may be around the question: Can we generate alternative situations that people with different roles, status, and preferences could live with even if the situation was not ideal? Can we jointly enact change that is beneficial to some and at least acceptable to others? Can we design change that is technically and culturally feasible and does not trigger levels of resistance that stifles any progress? In our research at GIIL, we intend to give voice to practitioners who operate from soft- and critical-system perspectives and to understand how effective interventions can be designed.

3. Scaffolding System Change: Structures that support and direct change efforts

Research efforts in this dimension will focus on several important questions:

3.1. Leadership challenges

How do leaders set up engagement structures that guide change efforts between two ineffective system extremes: i) intervening in systems based on resources external to a system and based on a Western system engineering perspective and ii) getting stuck trying to create an egalitarian utopia based on only local resources and full local consensus? We intend to unearth the leadership challenges that define effective approaches towards system change and transformation.

3.2. Scaffolding

GIIL research has recently identified and characterized effective ways of creating and of layering scaffoldings over time. Effective scaffoldings generate intermediate positions that stabilize change and avoid the tendency of systems to revert to its former state. Scaffoldings also enable reflection and local participation to bring stakeholders along. Ineffective system change approaches risk losing stakeholders and generating conflict along the way.

3.3. How do we amalgamate power and influence with design and soft/critical perspectives?

Power is an under researched but crucially important aspect of systems. Power is an important dimension of system architectures and enables and constraints action. Developing and nurturing different sources of power is an essential element of intervening in system architectures to drive desired change. We intend to look at the issue of power more systematically and to understand issues such as the legitimacy of employing certain forms of power or the difficulties of engaging with powerful system stakeholders.