

2009

Leveraging Grantmaking: Understanding the Dynamics of Complex Social Systems

David Peter Stroh

Follow this and additional works at: <http://scholarworks.gvsu.edu/tfr>

Recommended Citation

Stroh, David Peter (2009) "Leveraging Grantmaking: Understanding the Dynamics of Complex Social Systems," *The Foundation Review*: Vol. 1: Iss. 3, Article 9.

DOI: <http://dx.doi.org/10.4087/FOUNDATIONREVIEW-D-09-00037.1>

Available at: <http://scholarworks.gvsu.edu/tfr/vol1/iss3/9>

This Article is brought to you for free and open access by ScholarWorks@GVSU. It has been accepted for inclusion in The Foundation Review by an authorized administrator of ScholarWorks@GVSU. For more information, please contact scholarworks@gvsu.edu.

Leveraging Grantmaking: Understanding the Dynamics of Complex Social Systems

David Peter Stroh, M.C.P.

Introduction

In the summer of 2006, a group of local foundations supported the leaders of Calhoun County, Michigan (population 100,000), to develop a 10-year plan to end homelessness (Stroh & Goodman, 2007). The agreement forged by government officials at the municipal, state, and federal levels — along with business leaders, service providers, and homeless people themselves — came after years of leadership inertia and conflict among service providers regarding what needed to be done to solve the problem instead of just cope with it. Moreover, the plan signaled a paradigmatic shift in how the community viewed the role of temporary shelters and other emergency response services. Rather than be seen as part of the solution to homelessness, these programs came to be viewed as one of the key obstacles to ending it.

The plan won state funding, and a new executive director supported by a multi-sector board began steering implementation. Service providers who had previously worked independently and competed for foundation and public monies came together in new ways. One dramatic example was that they all voted unanimously to reallocate HUD funding from one service provider's transitional housing program to a permanent supportive housing program run by another provider. Jennifer Schrand, who chaired the planning process and is currently Manager of Outreach and Development for Legal Services of South Central Michigan, ob-

Key Points

- The nonobvious interrelationships among elements in a complex system often thwart people's best intentions to sustainably improve system performance.
- The complex, nonlinear problems that most foundations address can be solved most effectively by thinking systemically instead of linearly about these problems.
- Systems thinking offers a range of analytic tools to improve our capacity to think systemically, including ways to distinguish problem symptoms from root causes, reinforcing and balancing feedback, system archetypes, mental models, and system purpose and goals.
- Applying these tools enables us to target high-leverage interventions that can lead to sustainable, system-wide improvement.
- These tools can be applied using a five-step implementation process.

served, "I learned the difference between changing a particular system and leading systemic change."

Why was this intervention so successful when many other attempts by foundations to improve the quality of people's lives fall short? For example, urban renewal programs of the 1960s were backed by good intentions and significant funding, yet they failed to produce the changes envisioned for them. Moreover, the programs often made living conditions worse — leading to such outcomes as

abandoned public housing projects and increased unemployment that resulted from apparently successful job training programs (Forrester, 1969). Stories of well-intentioned yet counterproductive solutions continue to be numerous, as we learn that temporary shelters can undermine community efforts to end homelessness, food aid can lead to increased starvation, and drug busts can increase drug-related crime. In other cases, short-term successes are frequently not sustained and the problem mysteriously reappears, as, for example, when civic leaders invested in programs to reduce urban youth crime or international donors funded the drilling of wells in African villages to improve access to potable water.

“When you are confronted by any complex social system ... with things about it that you’re dissatisfied with and anxious to fix, you cannot just step in and set about fixing with much hope of helping. This is one of the sore discouragements of our time”

The planning project to end homelessness combined two significant interventions: a proactive community development effort engaging leaders in all sectors along with homeless people themselves, and a systems diagnosis that enabled all stakeholders to agree on a shared picture of why homelessness persisted and where the leverage lay in ending it. The purpose of this two-part article is to focus on the less commonly used intervention: applying systems thinking to help foundations make better decisions about how to use their limited grantmaking resources for highest, sustainable impact. Part 1 addresses two key questions:

- Why are good intentions and obvious solutions not enough to solve the chronic, complex problems many foundations seek to address?
- Where are the leverage points for improving system performance in sustainable ways?

Part 2 of the article will focus on how foundations can increase the return on their social investments by aligning their grantmaking system with the dynamics of the social systems they seek to improve.

The Nonobvious Nature of Complex Systems

Lewis Thomas, the award-winning medical essayist, observed, “When you are confronted by any complex social system ... with things about it that you’re dissatisfied with and anxious to fix, you cannot just step in and set about fixing with much hope of helping. This is one of the sore discouragements of our time” (Thomas, 1979, p. 110). The homelessness and other stories above all epitomize this poignant insight. They share other specific characteristics:

- The solutions that were implemented seemed obvious at the time and in fact often helped achieve the desired results *in the short term*. For example, it is natural to provide shelter, even temporary, for people who are homeless or offer food aid when people are starving.
- The longer-term impacts of the same solution tend to neutralize short-term gains or even make things worse *in the long term*. For example, the temporary shelters provided by Calhoun County led to the ironic consequence of reducing the visibility of its homeless population, which reduced community pressure to solve the problem permanently.
- The negative consequences of these solutions are *unintentional*; everyone is doing the best they can with what they know at the time.

How can the interactions over time among elements in a complex system transform the best of intentions into such disappointing results? The reason lies in part because of our tendency to apply linear thinking to complex, nonlinear problems. Systems and linear thinking differ in several important respects, as shown in Table 1 (see, for example, Senge, 1990).

For example, a linear approach to starvation might lead donors to assume that sending food aid solves the problem. However, thinking about

TABLE 1 Distinguishing Linear Thinking from Systems Thinking

Dimension	Linear thinking	Systems thinking
Causality	There is a direct connection between problem symptoms and their underlying causes.	System performance is largely determined by interdependencies among system elements that are indirect, circular, and nonobvious.
Time	A policy that achieves short-term success ensures long-term success.	The unintended and delayed consequences of most quick fixes neutralize or reverse immediate gains over time.
Responsibility	Most problems are caused by external factors beyond our control.	Because actions taken by one group often have delayed negative consequences on its own performance as well as the behavior of others, each group tends to unwittingly contribute to the very problems it tries to solve and to undermine the effectiveness of others.
Strategy	To improve the performance of the whole, we must improve the performance of its parts.	To improve the performance of the whole, we must improve relationships among the parts.
	Tackle many independent initiatives simultaneously to improve all the parts.	Identify a few key interdependencies that have the greatest leverage on system-wide performance (a.k.a. leverage points) and shift them in a sustained, coordinated way over time.

it in a systemic way would raise concerns about such unintended consequences of food aid as depressed local food prices that deter local agricultural development and leave a country even more vulnerable to food shortages in the future. From a systemic view, temporary food aid only exacerbates the problem in the long run unless it is coupled with supports for local agriculture.

Because the problems addressed by foundations are largely systemic, one step they can take to increase the social return on their grantmaking investments is to *think systemically* (vs. *linearly*).

The Basic Tools of Systems Thinking

There are several complementary approaches to systems thinking, including general systems theory (see, for example, Bertalanffy, 1968), dynamic feedback (see, for example, Senge, 1990), and complex adaptive systems (see, for example, Zimmerman, Lindberg, & Plsek, 1998). This article focuses on dynamic feedback and introduces such tools as

1. The iceberg — a tool for distinguishing problem symptoms from root causes

2. Reinforcing and balancing feedback
3. Mental models — what people believe or assume to be true
4. System purpose and goals
5. Archetypes — recurring stories or patterns that stimulate insight into more complex dynamics.

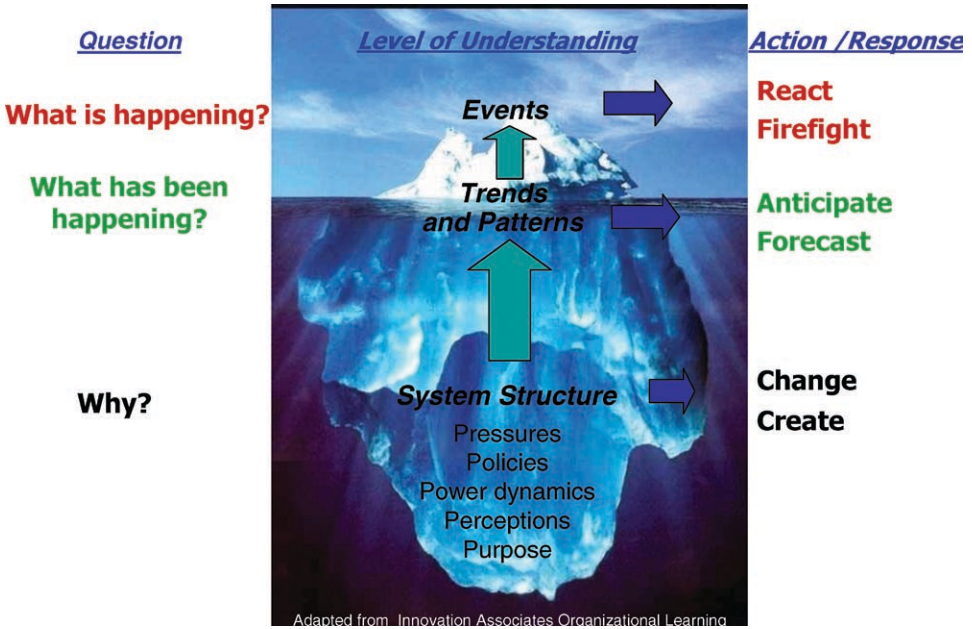
They are not difficult to learn and may shape a more impactful grantmaking process.

Tool 1: The Iceberg

Linear thinking tends to mask the nonobvious relationships between problem symptoms and causes that complex systems exhibit. The iceberg is a simple tool for distinguishing symptoms from causes. As shown in Figure 1, it distinguishes three levels of insight — each of which is informed by a specific question and prompts a certain type of action or response.

We often focus our attention on responding to individual *events*. We want to know what is happening and react quickly to the crisis at hand. For example, the untimely death of a homeless person or appearance of people asking for money or food

FIGURE 1 The Iceberg



in a downtown area might temporarily increase community pressure to solve the homelessness problem. Alternatively, natural disasters such as Hurricane Katrina, the Indonesian tsunami, or a major drought call for rapid deployment of resources to save lives and property. Yet as we see in the food aid example, *how* we respond to a crisis can have an enormous impact on the long-term health of the people we help. These impacts are not necessarily obvious unless we think them through.

Sometimes we step back from individual events long enough to recognize ongoing *trends or patterns*. We ask what has been happening over time and try to anticipate the future based on the past. Trends can often be surprising and disturbing. For example, efforts to reduce homelessness in Calhoun County had leveled off despite the fact that the estimated number of homeless people continued to increase. Moreover, visibility of the problem as measured by civic and media attention had declined over many years even though the problem continued to worsen. This disturbing pattern is summarized in Figure 2.

In the face of such patterns, we want to know why the problem persists and permanently change the

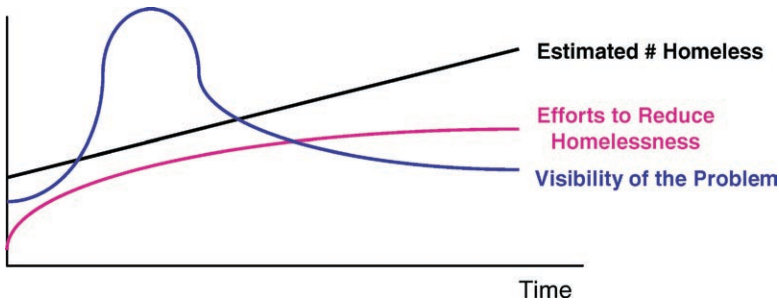
trends to ensure a significant and lasting decline in homelessness. The root causes of a chronic, complex problem can be found in its underlying *System Structure* — the many circular, interdependent, and sometimes time-delayed relationships among its parts. The structure includes both easily observable components — such as current pressures, policies, and power dynamics — and less obvious factors such as perceptions and purposes (goals or intentions) that influence how these components affect behavior.

In the homelessness example, people's perceptions (mental models, mind-sets, beliefs, and assumptions) included the following:

- Many people are homeless because they want to be.
- We are working as hard as we can to help people who are homeless.
- Funds must be directed toward the most visible problems.

The actual intention of the shelter and emergency services system was to temporarily reduce the problem's *visibility* and *severity* without addressing the underlying causes of socioeconomic pres-

FIGURE 2 Trends in Addressing Homelessness



sure coupled with personal vulnerability that gave rise to the problem. The system was not designed to end homelessness despite the espoused efforts of many to do so.

Hence, a second leverage point for foundations is to use the iceberg to *dig below more obvious events and trends in order to clarify the system structures at the root cause of complex, chronic problems.*

Tool 2: Reinforcing and Balancing Feedback

Reinforcing and balancing feedback are the two basic circular structures that describe how systems evolve over time. More complex dynamics result from combinations of these two feedback structures.

Reinforcing feedback is the basis for what we know as virtuous and vicious cycles. It explains the development of both engines of growth (a.k.a. flywheels) as well as spiraling deterioration. For example, Jim Collins has applied the flywheel concept he introduced in his book *Good to Great* (Collins, 2001) to suggesting how social sector organizations can develop their own engines of success (Collins, 2005, pp. 23–28). He believes that success in the social sector hinges on the ability to grow organizations (not just programs) by building a brand that attracts support that yields demonstrable results and in turn strengthens the brand. Collins also points out that the same reinforcing dynamic can produce the opposite effect, as when an organization that performs poorly weakens its brand reputation, which makes it more difficult to attract resources and drives results down even further. Several

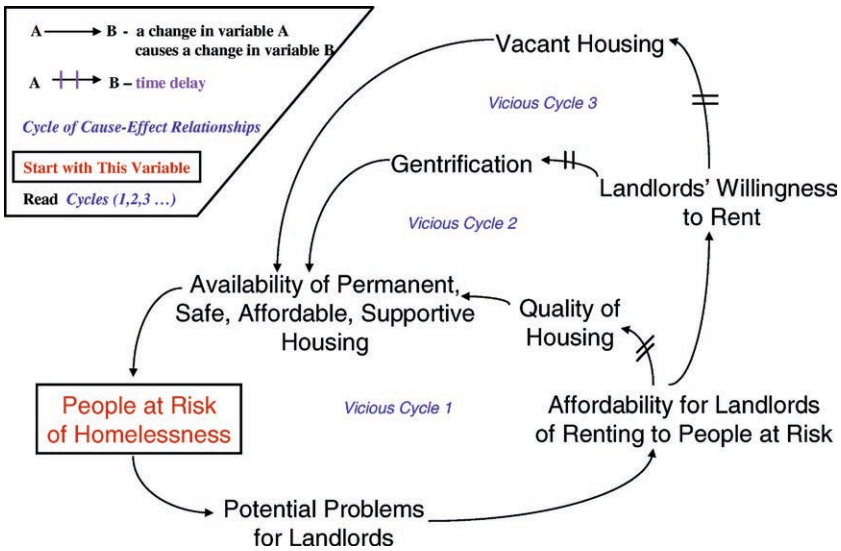
overlapping vicious cycles in the homelessness case explain how the number of people at risk of becoming homeless tended to increase over time, and how homelessness could coexist with vacant housing (see Figure 3).

Most people are accustomed to thinking of growth as a linear process. However, reinforcing feedback describes a more common process in social and economic systems — that of exponential growth where a quantity increases by a constant percentage of the whole in a constant time period. Such phenomena as increases in savings and population are familiar illustrations of exponential processes. Foundations seeking a long-term return on their grantmaking investments benefit from cultivating critical mass or tipping points that build sustainable momentum in a social system (Ball, 2006; Gladwell, 2000).

The following French riddle points out several important implications of exponential growth (Meadows, Meadows, Randers, & Behrens, 1972). Imagine a lily pond where the lily plant doubles in size every day, and the pond is totally covered by the lily in 30 days. When is the pond half-covered? The answer, which is surprising for many people, is 29 days; that is, half of the pond is covered just one day before the pond is completely blanketed by the lily. How much of the pond is covered in 15 days? The answer here is 0.0025%; that is, half-way into the month the lily is barely noticeable.

The exponential nature of organic growth has several consequences for foundation decision making. First, most people tend to expect to see

FIGURE 3 Deterioration of Affordable Housing



improvements faster than they are capable of developing. Expecting the system to shift quickly can lead to unrealistic demands for growth that ultimately slow improvement down if not kill it entirely. Alternatively, people can miss or misinterpret small improvements and give up prematurely on supporting a change that takes time to manifest. Figure 4 depicts the exponential nature of organic reinforcing growth and contrasts it with the more typical linear assumption people hold about how things *should* grow.

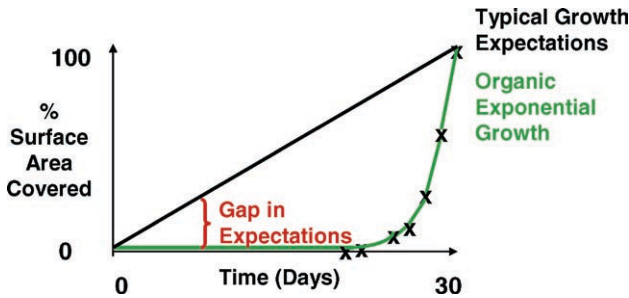
Second, a success engine or flywheel is built not only on the individual factors that contribute to growth, but also on how these factors interact to reinforce each other over time. For example, successful micro-lending programs integrate community involvement, peer support, financial investment, economic results, job creation, and community reinvestment in ever-expanding spirals. An implication for foundation managers might be that they evaluate grantee plans based on the clarity and soundness of their structural design — how the parts fit together — rather than on the individual elements themselves. It can be helpful to notice that one approach to increasing the effectiveness of a theory of change is to explain how parts of the system are intended to interact in both direct and indirect ways over time.

Third, because exponential growth also applies to seemingly trivial problems getting much worse over time, it is important to monitor such problems early on and consider addressing them rapidly instead of hoping they go away. For example, the “broken windows theory” suggests that community instability is catalyzed by disorderly conditions (Kelling and Wilson, 1982). The theory is based on research showing that a car in good condition in a poor neighborhood would be vandalized only after one window had been broken. It has led police departments around the country to control minor misbehaviors and maintain a clean environment to prevent major crimes from occurring (Johnson, 2009).

Hence, a third leverage point for foundations is to *cultivate engines of growth slowly and break potential vicious cycles quickly*.

Balancing feedback is the second foundational structure in complex systems. It is the core dynamic of problem-solving or goal-seeking behavior. We recognize it in our daily experience, for example, when we balance our needs for activity and replenishment by eating when we get hungry or sleeping to refresh ourselves. In contrast to reinforcing feedback loops that *amplify* an existing condition, balancing feedback seeks

FIGURE 4 Lessons From the Lily Pond



to *correct* or reverse a current state to bridge the gap between actual and desired performance. For example, a foundation might fund a mentoring program between older and younger students to improve graduation rates or a counseling program to reduce teen pregnancy. When balancing feedback accomplishes a desired goal, the corrective process often becomes invisible. When we eat enough food or get enough sleep, we tend to take these functions for granted. Alternatively, foundations might terminate funding for a program that appears successful and divert funds to meet a more pressing need.

By contrast, we are more aware of balancing processes when a system is *not* accomplishing the goal we state for it. In other words, balancing feedback also helps explain why systems do not change despite people's best efforts to improve them. Simple corrective processes fail to function as intended in at least one of three ways.

First, we often stop investing in the solution once a problem appears solved. This act of "taking the pressure off" often leads the problem to recur — much to the frustration of the problem solvers. For example, urban youth crime in Boston was a serious problem in the early 1990s. Political and community leaders banded together to develop numerous coordinated solutions in response, for instance, community policing, neighborhood watches, gang outreach, and after-school programs. When youth crime declined as a result, political leaders felt obligated to shift funds to more obviously pressing problems. As a result, they gradually began to cut back on the crime

prevention programs that worked so well, and the problem returned (Fox, 2003).

The second tendency is to fail to appreciate the time required to effect change. For example, a recent success story on curbing teen drinking and substance abuse in one Massachusetts community of 46,000 where adults also exhibited above average rates of alcohol and drug abuse described how coordinated improvements had gradually taken hold over a period of 11 years (Moscowitz, 2008). Such patience and persistence is rare. Normal reactions in the face of time delay are either to become impatient and push for premature results or to give up too quickly.

The third way in which balancing loops can fail to correct an existing situation is when there is lack of agreement on the goals of the system, the current level of performance and what drives it, or both. For example, a report sponsored by the Ball Foundation noted there is no lack of educational innovation in selected U.S. schools and school districts (Institute on Education and the Economy, 1995). However, educators seeking to disseminate these innovations on a broader scale were confronted by serious disagreements about both the goals of K–12 education and current performance levels.¹ Some school districts defined their goals in terms of test scores, while others viewed graduation, subsequent employment, or the motivation and capacity for continuous learning as the desired result. Similarly, these school districts measured actual performance

¹ The author wishes to thank Jennifer Kemeny and Sherry Immediato for this insight based on their work in the project.

differently in terms of test scores, how children performed after graduation, and indicators of creativity and self-directed learning. It is very difficult to define and disseminate a particular strategy when the desired future, system goals, and/or perceptions of current conditions are ambiguous or conflicted. By contrast, anchoring the system in a common picture of the desired state (for example, through shared visioning) and a common understanding of current reality and why it persists (for example, through systems thinking) builds *creative tension* that aligns and propels the efforts of multiple stakeholders (Senge, 1990).

These insights about balancing loops point to three additional leverage points that foundations might focus on:

- In order to reduce the risk of taking the pressure off, *ensure that effective solutions are reinforced and can be sustained over time.*
- Respect time delays: *be patient and persistent* in your grantmaking.
- *Establish a clear and compelling shared vision, joint goals, and a common understanding of current reality before developing strategy.*

The influence of mental models can direct foundations to another leverage point: clarify and shift mental models that influence the way the system operates.

Tool 3: Mental Models

Mental models encompass what people believe or assume to be true. They are often described as paradigms, mind-sets, beliefs, assumptions, cultural narratives, norms, expectations, or simply perceptions. Mental models significantly impact how people behave and perform. For example, the “shelter mentality” in Calhoun County turned out to be such a significant factor in perpetuating homelessness that the 10-year plan to end homelessness identified shifting people’s mind-

set to valuing a comprehensive array of support, housing, and employment services as one of their top goals. Other critical mental models that needed to be addressed included “Many people are homeless because they want to be” and “Funds must be directed towards the most visible problems.”

While mental models are necessary to help us simplify the world, they are inherently limited and can often become outmoded as conditions change. To ensure that current mental models are still relevant and useful, foundation staff might do the following:

- Surface current beliefs held by system stakeholders, including people in the foundation.
- Test the utility rather than validity of these beliefs, that is, determine if the beliefs help people achieve the results they really want instead of whether or not they are true.
- Encourage stakeholders to expand their views by supporting them to learn from each other.
- Point out disconfirming data that challenges the validity of current beliefs.
- Consider how existing data might be interpreted differently, for example, by accounting for time delays or the tendency to take the pressure off of a “solved” problem.
- Help people clarify the future they want to create and define new beliefs or assumptions that support them to achieve it.
- Establish experiment(s) that people can run to test the viability of these new beliefs and assumptions.

The influence of mental models can direct foundations to another leverage point: *clarify and shift mental models that influence the way the system operates.*

Tool 4: Purpose

A foundational principle in systems thinking is that a system is exquisitely designed to achieve its current purpose. This principle has two implications:

- It is important to understand the payoffs of the status quo no matter how dysfunctional it appears to be

- System goals are more effective when they target desired results instead of expected effort.

First, a core reason that systems resist change is that the purpose achieved by the current system — as defined by its vision, mission, values, goals, and/or metrics — is more compelling than its espoused purpose. For example, community leaders in Calhoun County pursued goals of reducing the visibility of homelessness and temporarily easing people's pain through shelters even though they espoused a goal of permanently ending homelessness. Any one stakeholder in a system can undermine its own ability to achieve espoused goals because it holds competing goals without recognizing the discrepancy (Kegan & Lahey, 2001). Conflicting goals can also be held by different stakeholders in the system — as when Israeli settlers and Islamist extremists hold goals of one unified religious state west of the Jordan River while the majority of the populations on both sides favor a two-state solution (Stroh, 2002).

In order for people to reconcile what they say they *want* the system to accomplish with what it actually *is* accomplishing, people have two basic choices. The ideal solution is to realize both purposes simultaneously. For example, it is possible to design homeless shelter services in a way that simultaneously supports people to achieve permanent housing. However, the both/and solution is often not feasible either because focusing on short-term goals frequently undermines the system's ability to achieve long-term goals or because certain goals are inherently incompatible. The alternative under these circumstances is to consciously choose one of the two intentions and primarily focus on this result. In the case of Calhoun County, community leaders consciously chose creating permanent, safe, affordable, and supportive housing rather than coping with homelessness as their purpose going forward.

Second, because it is often easier to measure effort than results, people tend to create systems that utilize a lot of resources for questionable outcomes. Well-known systems theorist Donella Meadows explains:

If the desired system state is good education, measuring that goal by the amount of money spent per student will ensure money spent per student. If the quality of education is measure by performance on standardized tests, the system will produce performance on standardized tests. Whether either of these measures is correlated with good education is at least worth thinking about. (Meadows, 2008, p. 138)

The implication for foundations is to distinguish and reconcile desired results with current outcomes and metrics.

In the case of Calhoun County, measuring prevention of homelessness is more difficult than measuring either temporary care or resettlement in permanent housing. However, it has been estimated that one dollar spent on prevention is worth six dollars required to house people who have become homeless. Success in reducing the risk of homelessness might be difficult to evaluate, but risk reduction is very effective.

The implication for foundations is to *distinguish and reconcile desired results with current outcomes and metrics*.

Tool 5: System Archetypes

Most complex problems arise from combinations of many reinforcing and/or balancing feedback processes. The good news is that we can gain preliminary insight into a wide range of dynamics by learning a dozen or so system *archetypes* or classic stories. The archetypes are recurring patterns that appear in many different situations. They are well-understood, easily transferable across different system contexts, and often serve as catalysts for discerning even more complex dynamics (Kim, 1993).

One of the most common archetypes is the story of *Shifting the Burden (to the Quick Fix)*. This is the basic archetype of unintended dependency

or addiction. The dynamic describes a situation where people are aware of a long-term, fundamental solution to a problem symptom. However, they choose to implement a quick fix instead because it is easier to do so and in fact temporarily relieves the problem symptom. Over time, continuous dependence on the quick fix makes it increasingly difficult to implement the long-term solution even if people wanted to. As a result the problem symptom gradually gets worse. Addiction to shelters and emergency services constituted a core dynamic in perpetuating homelessness in Calhoun County (see detail in the next section). Other examples include countries that become addicted to food aid while undermining the more fundamental response of local agriculture development, African villages that became dependent on the government to fix wells the government had installed, and our nation's dependence on prisons instead of community socioeconomic development to reduce urban crime.

The implication for foundations is to look for archetypal patterns of behavior that begin to explain why a complex problem persists.

Other common archetypes include *Fixes That Backfire* — the story of unintended consequences, *Limits to Growth* — the story of unanticipated constraints, *Tragedy of the Commons* — the story of optimizing the parts in a way that destroys the whole, and *Accidental Adversaries* — the story of partners who become enemies. An example of a Fix That Backfires occurs when drug busts take criminals off the street and thus reduce drug-related crime in the short run, but also remove drugs from circulation, thereby increasing drug prices and requiring addicts to steal more to pay for the reduced supply in the long run (Friedman, 1976). Foundations often face the challenge of Limits to Growth when they find it difficult to help their grantees scale up a successful ex-

perimental program. Tragedy of the Commons manifests in the overgrazing of such shared environmental resources as fisheries, water, and air. Nonprofit, public, and private sector organizations that seek to benefit from collaborating to solve a shared problem risk becoming Accidental Adversaries when they focus on the blind spots and shortcomings of their respective partners instead of building on each others' strengths.

The implication for foundations is to *look for archetypal patterns of behavior that begin to explain why a complex problem persists.*

Applying the Systems Approach

Implementing the systems approach involves:

1. Building a strong foundation for change by engaging multiple stakeholders to identify an initial vision and picture of current reality
2. Engaging stakeholders to explain their often competing views of why a chronic, complex problem persists despite people's best efforts to solve it
3. Integrating the diverse perspectives into a map that provides a multipartial and more complete picture of the system and root causes of the problem
4. Supporting people to see how their well-intended efforts to solve the problem often make the problem worse
5. Affirming a compelling vision of the future and supportive strategies that can lead to sustainable, system-wide change.

For example, in the homelessness case, the local Homeless Coalition had been meeting for many years to end homelessness. Their shared desire to serve the homeless had been undermined by disagreements about alternative solutions, competition for limited funds, and limited knowledge about best practices. Although many understood the importance of a collective effort to provide critical services, housing, and jobs to both homeless people and those at risk of losing their homes, they were unable to generate the collective will and capacity to implement such an approach. They lacked a shared vision of the future they wanted to create, an understanding of current reality,

FIGURE 5 Shifting the Burden to Temporary Shelters



and a common appreciation of how they were all contributing to that reality. Finally, the promise of state funding if they could agree on a 10-year plan to end homelessness, the provision of funding for developing the plan by local donors, and the use of a team of consultants experienced in community development, systems thinking, and national best housing practices enabled them to break through years of frustrated attempts.

The Coalition with the help of consultants enlisted and organized the support of community leaders across the nonprofit, public, and private sectors along with themselves and representatives from the homeless population. They established a set of committees and task forces as well as a clear and detailed planning process. While they began by *articulating* a shared vision of ending homelessness, they would not be able to really *commit* to this result until they fully understood the system dynamics that perpetuated the problem. My colleague Michael Goodman and I were brought in specifically to apply systems thinking to (1) understand the dynamics of local homelessness, (2) determine why the problem persisted despite people's best efforts to solve it, and (3) identify high-leverage interventions that could shift these dynamics and serve as the basis for a 10-year plan. Through interviews with all key stakehold-

ers, we analyzed a number of interdependent factors that led people to become homeless in the first place, get off the street temporarily, and find it so difficult to secure safe, supportive, and affordable permanent housing.

We learned that *the most ironic obstacle to implementing the fundamental solution was the community's very success in providing temporary shelters and supports*. These shelters and supports had led to several unintended consequences. One was that they reduced the visibility of the problem to the community overall. The low visibility was compounded by the facts that (1) many people were naturally reluctant to see the problem in the first place, (2) people who were homeless were also fearful of being seen and hid their condition as best they could, and (3) there was a lack of accurate data about the extent of the problem. The overall lack of visibility reduced community pressure to solve the problem and create a different future.

The temporary success of shelters and other provisional supports also tended to reinforce funding to individual organizations for their current work. Donors played a role in buttressing existing funding patterns through their pressure to demonstrate short-term success. Such reinforcement

TABLE 2 Leverage Points

1.	Think systemically (vs. linearly) to be strategic
2.	Dig below obvious events and trends to clarify system structures at the root cause of complex, chronic problems
3.	Cultivate engines of growth slowly and break vicious cycles quickly
4.	Ensure that effective solutions are reinforced and can be sustained over time
5.	Respect time delays: be patient and persistent
6.	Establish a clear and compelling shared vision, joint goals, and a common understanding of current reality before developing strategy
7.	Clarify and shift mental models that influence the way the system currently operates
8.	Distinguish and reconcile desired results with current outcomes and metrics
9.	Look for archetypal patterns of behavior that begin to explain why a complex problem persists
10.	Reduce dependence on quick fixes and develop shared vision in support of a fundamental solution
11.	Incorporate movement toward the fundamental solution into quick fixes that cannot be avoided

decreased the service providers' willingness, time, and funding to innovate and collaborate. This in turn led to

- Fragmentation of services
- Competition for existing funds
- Lack of deeper knowledge of best practices
- Reluctance to overcome government restrictions that made it difficult to innovate
- A shelter mentality.

The community's collective ability to implement the fundamental solution was undermined as a result. The essence of these dynamics is described in Figure 5.

Because archetypal dynamics are recurring and we understand what causes them, we also know a lot about the leverage points that help shift them. There are three proven interventions to transform the *Shifting the Burden* archetype:

1. Reduce dependence on the quick fix, often by exploring the mental models that influence their use
2. Build shared vision among key stakeholders that motivates people to implement the more fundamental solution

3. To the extent that people must rely in part on the quick fix, seek to apply it in a way that makes it easier (not harder) to implement the fundamental solution.

For example, in the homelessness case, we helped the county define goals based on these interventions that formed the basis for a 10-year plan subsequently approved by the state:

- Challenge the shelter mentality and end funding for more shelters
- Develop a community vision where all citizens have permanent, safe, affordable, and supportive housing
- Align the strategies and resources of all stakeholders including funders in service of this vision
- Redesign shelter and provisional support programs to provide more effective bridges to critical services, housing, and employment.

Two years later the county continues to make progress toward these goals. The program has an executive director, in-kind funding for space and supplies, additional funding focused on long-term strategies, and a community-wide board supported by eight committees underway

with clear charters producing monthly reports on their goals. A community-wide eviction prevention policy was changed to enable people to stay in their homes longer, and a street outreach program is going well to place people into housing.

The implications of the *Shifting the Burden* dynamic for foundations committed to funding fundamental solutions are to *reduce dependence on quick fixes, develop shared vision in support of the fundamental solution, and incorporate movement toward the fundamental solution into quick fixes that cannot be eliminated.*

A summary of all 11 leverage points appears in Table 2.

Summary and Conclusions

Good intentions are not sufficient to produce positive outcomes. This is especially important because nonobvious system dynamics often seduce us into doing what is expedient but ultimately ineffective.

At the heart of systems thinking is the ability to trace a problem from how it often manifests in the form of a specific event or a disturbing trend to determining and addressing its underlying root causes. This involves defining the various components of systems structure: formal elements such as pressures, policies, and power dynamics as well as more informal yet often governing aspects such as perceptions (or mental models) and purpose (or goals). It is especially useful to clarify how these components interact. The analytic tools of reinforcing and balancing feedback as well as frequently recurring system archetypes provide catalysts for understanding the often nonobvious interdependencies that shape system performance over time.

System behavior changes as a result of making a few, key coordinated changes over time. Based on this introduction to how dynamic systems function, the article has identified a five-step change process and 11 leverage points for achieving sustainable, system-wide improvement.

The implications of the Shifting the Burden dynamic for foundations committed to funding fundamental solutions are to reduce dependence on quick fixes, develop shared vision in support of the fundamental solution, and incorporate movement toward the fundamental solution into quick fixes that cannot be eliminated.

Despite the many benefits of this approach, it is also important to recognize the challenges foundations might face in implementing it. Systems thinking urges us to expand our horizons of *time* — approaching what we do in the short term within a clear long-term context — and *space* — engaging many diverse stakeholders as partners in a continuous learning process. Part 2 of this article will help foundations meet these challenges by suggesting ways in which they can align their programming approaches and systems with the dynamics of how complex social systems behave and evolve.

References

- BALL, P. (2006). *Critical mass: How one thing leads to another*. New York: Farrar, Straus and Giroux.
- BERTALANFFY, L. VON. (1968). *General systems theory*. London: Penguin.
- COLLINS, J. (2001). *Good to great*. New York: Harper-Collins.
- COLLINS, J. (2005). *Good to great and the social sectors*. Boulder, CO: Jim Collins.
- FORRESTER, J. (1969). *Urban dynamics*. Waltham, MA: Pegasus Communications.
- FOX, J. A. (2003, December 1). Ganging up. *Boston Globe*.
- FRIEDMAN, S. (1976, April 22). When heroin supply cut, crime rises, says report. *Boston Globe*.

- GLADWELL, M. (2000). *The tipping point*. New York: Little Brown.
- INSTITUTE ON EDUCATION AND THE ECONOMY. (1995, October). *Using what we have to get the schools we need: A productivity focus for American education*. IEE Document No. Bk-5. New York: Teachers College, Columbia University.
- JOHNSON, C. (2009, Feb. 8). Study backs theory that links conditions, crime. *Boston Globe*.
- KEGAN, R., & LAHEY, L. L. (2001). *How the way we talk can change the way we work*. San Francisco: Jossey-Bass.
- KELLING, G., & WILSON, J. Q. (1982, March). Broken windows. *The Atlantic*, 249(3), 29–38.
- KIM, D. (1993). *Systems archetypes I*. Waltham, MA: Pegasus Communications.
- MEADOWS, D. (2008). *Thinking in systems*. White River Junction, VT: Chelsea Green.
- MEADOWS, D. H., MEADOWS, D. L., RANDERS, J., & BEHRENS, W. (1972). *The limits to growth*. New York: Universe Books.
- MOSCOWITZ, E. (2008, December 22). Just say 'in the know.' *Boston Globe*, pp. B1, B5.
- SENGE, P. (1990). *The fifth discipline*. New York: Doubleday.
- STROH, D. P. (2002). A systemic view of the Israeli-Palestinian conflict. *The Systems Thinker*, 13(5), 2–7.
- STROH, D. P., & GOODMAN, M. (2007). A systemic approach to ending homelessness. *Applied Systems Thinking Journal* (Topical Issues No. 4). Available online at http://www.appliedsystemsthinking.com/supporting_documents/TopicalHomelessness.pdf.
- THOMAS, L. (1979). *The medusa and the snail*. New York: Viking.
- ZIMMERMAN, B., LINDBERG, C., & PLSEK, P. (1998). *Edgware: Lessons from complexity science for health care leaders*. Dallas, TX: VHA.

David Peter Stroh, M.CP., was a founding partner of Innovation Associates, the pioneering consulting firm in the area of organizational learning, and has expertise in the areas of visionary planning, leadership development, systems thinking, and change management. Much of his work over the last 30 years has focused on using systems thinking to develop organizational strategy, facilitate sustainable change, and resolve deep-seated conflict. He is currently a principal with Bridgeway Partners, an organizational consulting firm dedicated to supporting social change through the application of organizational learning disciplines. Correspondence concerning this article should be sent to David Peter Stroh, Bridgeway Partners, 160 Lancaster Terrace, Brookline, MA 02446 (e-mail: dstroh@bridgewaypartners.com).