Systems Thinking for Social Change by David Peter Stroh

A Practical Guide to Solving Complex Problems, Avoiding Unintended Consequences, and Achieving Lasting Results

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Notes by Ishmam Ahmed. Please visit ishmam.com for more information.

Introduction
- Organizations and social systems have a life of their own, which is why they may be resistant to change; the key is to work *with* organizations
- The book is based on a simple premise: Applying systems thinking principles and tools enables you to achieve better results with fewer resources in more lasting ways. Works because: helps increase awareness, empower you and your intentions, mobilize stakeholders, anticipate consequences, identify high-leverage interventions, and motivate learning.
- Gain tools to become a more effective program director, educator, advocate, agency, policy maker, and manager.

What You Will Learn
- How to address chronic, complex, social problems.
  - "The significant problems we face cannot be solved with the same level of thinking we were at when we created them." —Albert Einstein
- How to apply systems thinking as both a set of principles and as analytical tools.
  - Tools such as: iceberg, casual loop diagramming, systems archetypes, Bathtub Analogy
- How to integrate systems thinking into a proven four-stage change management process.
  - Build foundation, see status quo, make value choices, build a bridge to aspirations
  - "If you are not aware of how you are part of the problem, you can't be part of the solution."
  - Enable people to identify high-leverage interventions based on deep insights into root causes that incorporate their personal thinking and behavior.
  - The key is to help participants cultivate a deep awareness of current reality as something they have created instead of as something that exists outside of and independent of them.
- How to compare the benefits of change to benefits of the status quo to catalyze new choices.
- How to apply systems thinking prospectively and retrospectively.
- How to cultivate systems thinking as a way of being, not just a way of thinking.
  - Cultivate curiosity, compassion, and courage
- Examples of stories in which system thinking have been applied:
  - Aligning a community of 100,000 people around a ten-year plan to end homelessness
  - Designing a more effective statewide early-childhood development/education system
  - Improving the quality of environmental public health at state, county, city level
  - Reforming criminal justice system, particularly to reduce recidivism
  - Increasing people's fitness and consumption of health local food in a rural region.
- Think through difficult issues
- Understand what you don't know and how to learn it.
- Ask great questions.
- Engage others more effectively by seeing reality from their perspective.
- Apply a problem-solving approach that is both flexible and concrete.

- See a bigger picture that clarifies connections among many factors and identifies root causes.
- Focus on what is important.
- Work toward deep systems change by transforming the underlying assumptions and policies that govern existing processes and procedures.

Part One - Systems Thinking for Social Change

Chapter One - Why Good Intentions Are Not Enough
- Failed social policies have similar characteristics
  - Address symptoms, not root cause
  - Are obvious and succeed only in the short-term
  - Produce negative consequences that are unintentional
  - Lead us to assume that we are not responsible for the problem's recurrence
    - e.g. "Get Tough" prison programs draw funds away from permanently reducing crime

Conventional vs Systems Thinking
- Conventional Thinking
  - Divide world into specific disciplines and problems under the assumption that we can best address the whole by focusing on optimizing the parts
  - Others are to blame for our problems; *they* must be the ones to change
  - Aggressively tackle many independent initiatives simultaneously
- Systems Thinking
  - In order to optimize the whole, we must improve *relationships* among parts
  - We unwittingly create our own problems and have significant control/influence over solving them through changing our behavior
  - Only a few key coordinate changes sustained over time will produce large change.

Refining the Definition of Systems Thinking
- A system: interconnect set of elements that is coherently organized in a way that achieves something. *Systems achieve a purpose.*
- Systems thinking: ability to understand interconnects to achieve *desired* purpose.
- This book is based on the concept of causal feedback loops in systems. This context embraces multiple dimensions:
  - Spiritual: ability to see and articulate what will benefit diverse people over time.
  - Emotional: ability to master emotions in service of a higher purpose.
  - Physical: ability to bring people together and enable them to collaborate.
  - Mental: ability to recognize how our individual and collective thinking affects results.
- The greatest opportunities for lasting change arise when all the players reflect on and shift their own intentions, assumptions, and behavior.

Chapter Two – Systems Thinking Inside: A Catalyst for Social Change
- Example: rising educational expectations, tighter budgets, and tension between central organizations (that promote standardized systems) and districts (that want to pursue innovation tailored to their immediate constituents) demanded partnership.
  - Today: they operate with shared purpose, vision, and set of values; supporting jointly developed theory of success; working toward common goals; meeting monthly, reviewing shared metrics, and achieving meaningful results.

- What enabled partnership?
  - Definition of shared aspiration
  - Identification of the Accidental Adversaries archetype

How Systems Thinking Meets Four Challenges of Change
- *Motivates* people to change because they discover their role in exacerbating problems
- *Catalyzes collaboration* because people learn how they collectively create poor results
- *Focuses* people to work on a few key coordinated changes over time
- *Stimulates continual learning* by helping people see knowledge is never complete or static

- Conventional approach vs. Systems Thinking
  - Motivation: Appeal to desire or fear vs. ask why we should accept and change reality
  - Collaborate: Tell people they should vs. ask why work together, and demonstrate
  - Focus: tackle many issues, symptoms vs. use leverage to change a few key things
  - Learning: assume others must learn vs. our learning -> our actions -> others' actions

When to Use Systems Thinking
- When a problem is chronic and has defied people's best intentions to solve it
- When diverse stakeholders find it difficult to align their efforts despite shared intentions
- When trying to optimize part of a system without understanding impact on the whole
- When stakeholders' short-term efforts undermine their efforts to solve a chronic problem
- When people are working on a large number of disparate initiatives at the same time
- When promoting particular solutions (e.g. best practices) come at the expense of learning

Systems Thinking for Collective Impact
- Conditions for collective success across diverse stakeholders
  - A common agenda (shared language, understanding of goal, shared theory of change)
  - Shared measurement systems
  - Mutually reinforcing activities (Build trust knowing where one can support the other)
  - Continuous communication
  - Backbone support organizations
- Areas where collective impact thinking can have large impact
  - Enabling leaders to overcome tendency to tout their own successes in favor of being honest about what is working, not working, and where they need help
  - Encouraging organizations to leverage third-party points of view on long-term solutions
  - Engaging community members as active leaders and service providers

Chapter Three – Telling Systems Stories
- The US is the world's largest incarcerator among developed nations
- Scope of the problem: 2.5 million behind bars today, 200,000 in the 1970s
- 650,000 return home each year
- Society is increasingly "governed by crime" — Berkeley Law professor Jonathan Simon
- In 2006, The After Prison Initiative (TAPI) convened for a three-day meeting with aims to:
  - Develop shared understanding of why incarceration rates and people returning are so high
  - End over-incarceration; facilitate successful reentry for formerly incarcerated people
  - Strengthen working relationships and collaboration among advocates
  - Deepen awareness of interdependences among diverse efforts
  - Identify new ways to strengthen civic society institutions and promote inclusion

- Systems thinking, system mapping helped create shared story of why the problem persists

Storytelling for Social Change
- Telling stories is a powerful way to make sense of our own experiences and world around us
- Stories shape our identity, communicate who we are, and move other to act
- They are a primary way of distilling and coding information in memorable form
- Leaders use them to inspire
- Peace builders recognize that narratives can be in conflict
- Therapists use storytelling to help people heal from trauma by supporting them to shape a new and more constructive narrative based on past experience
- People committed to social change often share a similar story:
  - The world "stands in need of us" — Martin Buber; we are called to contribute our gifts and resources to support those less fortunate than ourselves
  - We are not making the impact we want despite our best intentions
  - The major obstacles to our success are limited resources and the behavior of others
- In blaming others, people minimize their own efficacy and downplay their own failures
- In order to optimize performance of the entire system, people need to shift from trying to optimize their part of the system to improving relationships among constituent parts
- By seeing the big picture and their role in it, people are more motivated to work together

Shaping a Systems Story
- In order to tell a systems story, people need to make three shifts:
  - Seeing just their part of the system -> Seeing the whole system and how it can change
  - Hoping others will change -> Seeing how they can first change themselves
  - Focusing on individual crises -> Understanding system structures that give rise to them

Seeing the Big Picture
- Blind men and the elephant illustration: they all see (feel) *part* of a complex reality (parts of the elephant) and tend to assume that what they see is the *whole* picture
- In the TAPI case, participants all saw the root cause differently: sentencing reform vs. prison lobby vs. tough-on-crime laws
- Challenge was to show them all how their success depended on each others' success
- First step: create strong and safe container for people to share perspectives; "getting the whole system in the room"
  - Expert presentations
  - Panels around specific issues
  - Reports on innovations being tested
  - World Café
  - Systems mapping
- Convening people systematically is necessary but not always sufficient to mobilize collaboration.
- A system map (detailed in Chapter 7) enables individual stakeholder groups to see how they contribute to the performance of the system as a whole, both positively and negatively
- For TAPI, one of the key insights was that politicians fanned public fear of criminals

Increasing Self-Awareness and Personal Responsibility

- The natural tendency to view one's own contributions favorably in relation to those of others is intensified by competition. People with shared aspirations often compete for resources, which increases reluctance to acknowledge shortcomings or value of others.
- A systems story uncovers how people contribute to their own problems despite their best intentions
- The greatest leverage people have in changing a system begins in changing themselves

Understanding The Deeper System Structure
- The iceberg metaphor is useful for distinguishing symptoms from root causes

QUESTIONS	FOCUS	ACTION OR RESPONSE
What happened?	EVENTS	React Fireflight
What's been happening?	TRENDS & PATTERNS	Anticipate Forecast
Why?	SYSTEMS STRUCTURE	Change Create

Pressures
Policies
Power Dynamics
Perceptions
Purpose

Learning Leverage
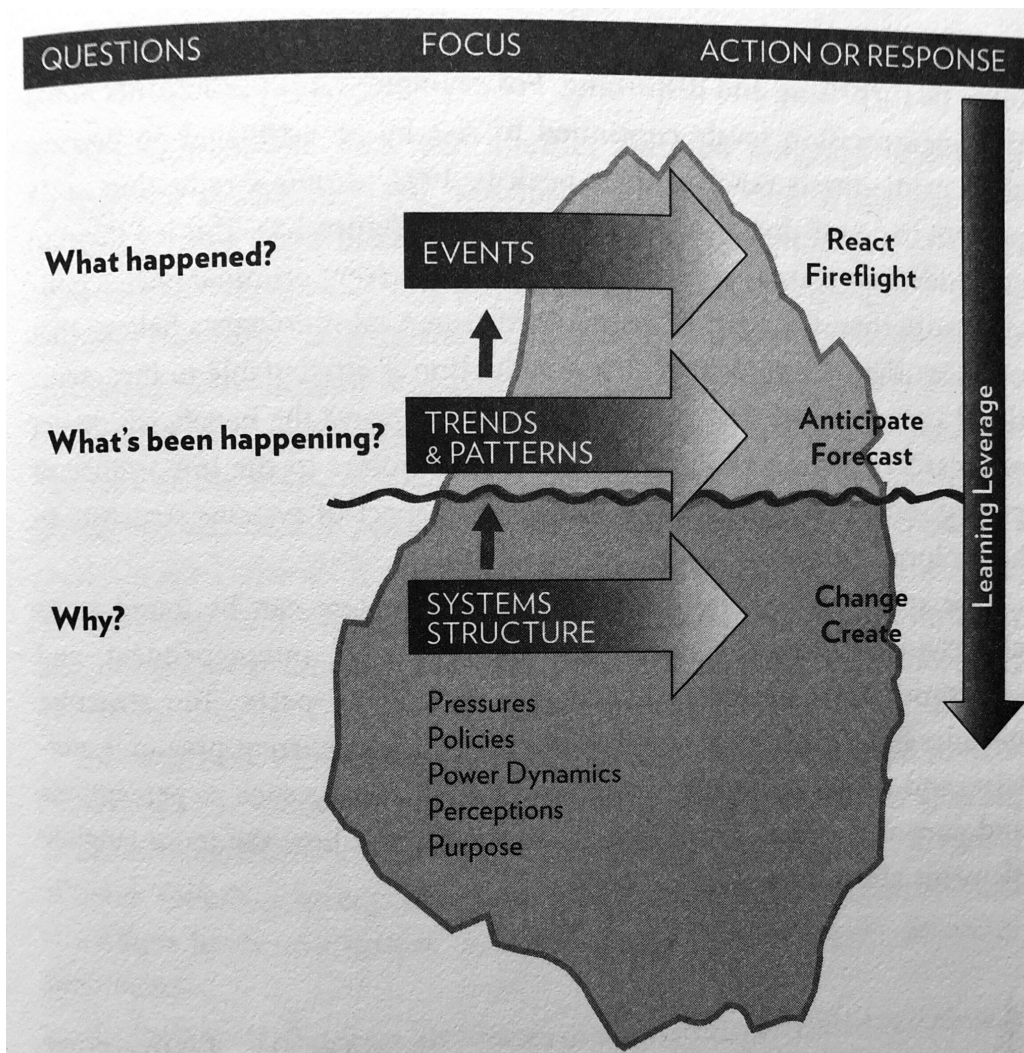
- Get-tough prison sentences often increase recidivism — firefighting is not deeply effective
- Incarceration levels continued to rise despite reduction in crime during 1991; this signaled a trend of fear and racism driving incarceration
- Underlying systems structure: many circular, independent, and time-delayed relationships between parts, observable elements such as current policies and dynamics and less obvious factors such as perceptions and purposes

The Elements of Systems Structure
- Systems thinking can be thought of as a language
- Plot lines: appear across many social issues. Most basic are stories of
  - Amplification – reinforcing feedback

- Correction – balancing feedback
- Plot lines combine into archetypal stories embedded in the human experience
- Attractors: deep beliefs or assumptions that people try to validate for better or worse

Basic Language of Systems Thinking
- Nouns of systems thinking: variables that change over time
  - Because they are the basis of systems stories, defining them is a key task
  - e.g. in the TAPI case, variables: number of people released from prison, problems with resettlement, technical parole violations, sectors benefitting from current system, cost of prisons, and money available for resettlement. Qualitative variables: fear for personal safety, political risks, political resistance to innovation
- Verbs of systems thinking: change in variables. Variables can be directly related, correlated, or inversely related.
- Time delay: how long it takes for variable A to cause change in B.
  - Important when considering long-term vs. short-term
  - Short-term small success that are planned from the beginning with the long term in mind are vital to encourage persistence and maintaining momentum

Chapter Four – Deciphering the Plots of Systems Stories
- To solve a chronic, complex problem, it helps to recognize discernible plot lines that tend to shape the behavior of people in social systems
- Certain plot lines commonly lead to ineffective change; avoid the rut by recognizing it
- Alternatively, plot lines can allow us to follow equally recognizable steps to get out of ruts

Basic Plot Lines
- We go around in circles of our own making without realizing it
- This chapter is about describing dynamics, not shaping them, which is detailed in Chapter 10
- Recognizing circles is the first step to changing them; *increasing self-awareness is intervention in and of itself, and the precursor to making any other changes*
- Reinforcing and balancing feedback are the two basic circular structures that describe how systems evolve over time

Reinforcing Feedback: The Story of Amplification
- Reinforcing feedback is the basis for what we know as virtuous and vicious cycles
- The unstable nature of reinforcing feedback is evident in boom-and-bust cycles such as the housing bubble that set off the 2008 economic crisis. Unsafe subprime mortgage lending practices fueled increased housing prices and more lending until the bad mortgages could no longer be spread farther and the housing market collapsed.
- Exponential growth is more common than linear growth in social and economic systems
  - Expecting the system to shift quickly can lead to unrealistic demands
  - People can miss or misinterpret small improvements and give up prematurely on supporting change that takes time to manifest
  - A success engine (flywheel) is built not only on individual factors that contribute to growth, but on how these factors interact to reinforce one another over time
    - e.g. successful micro-lending programs integrate community, peers, jobs, investment, reinvestment -> upward spiral. Successful grant plans detail the overall structure.
  - Goes both ways: downstream problems can be prevented from growing exponentially worse with early interventions

- e.g. maintaining a clean environment can catalyze orderly behavior
- Because the problem of climate change grew slowly, and because policymakers were only considering linear trend data, (and dependence on fossil fuel), they failed to act appropriately early on
- Understanding reinforcing feedback can help leaders to
  - Cultivate patience
  - Make decision based on underlying systems structures instead of trends
  - Break potential vicious cycles quickly

Balancing Feedback: The Story of Correction
- Balancing loops are a driver for improvement but also reason for why systems are resistant to change; the current system is in equilibrium around goals it is already achieving
- Human homeostasis is a balancing feedback loop
- When balancing feedback accomplishes a desired goal, the corrective process often becomes invisible; when we eat enough or get enough sleep, we take these functions for granted
- We are more aware of balancing processes when a system is *not* accomplishing the goal we state for it. Corrective processes fail to function as intended in at least one of three ways:
  - We stop investing in the solution once the problem appears solved
  - Fail to appreciate time required to effect change
  - Lack of agreement on goals of the system
- By understanding ineffective balancing loops, leaders can:
  - Ensure effective solutions are reinforced and sustained over time instead of reduced when the pressure decreases
  - Respect time delays by being patient and persistent with social investments
  - Establish clear and compelling shared vision

The Plot Thickens

- Most complex problems arise from combinations of two or more amplifying and/or balancing feedback loops. It's helpful to gain insight by becoming familiar with system archetypes or common stories:

A ⟶ B   Begin reading at the Box; a change in "A" causes a change in "B"

A ⟶ B (s)   A change in "A" causes a change in "B" in the Same direction

A ⟶ B (o)   A change in the Opposite direction

A ⟶ ‖ ⟶ B   Link with delay

Reinforces

Growing Action **R** Condition or Performance
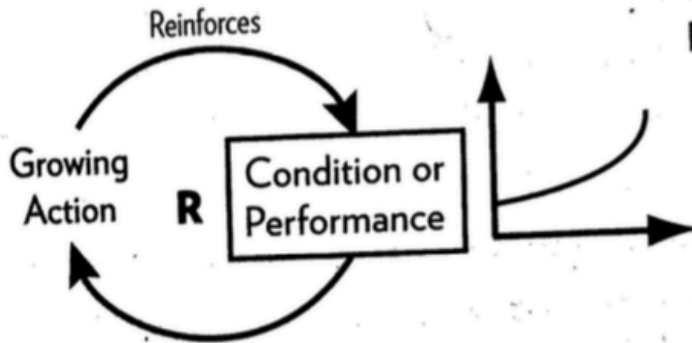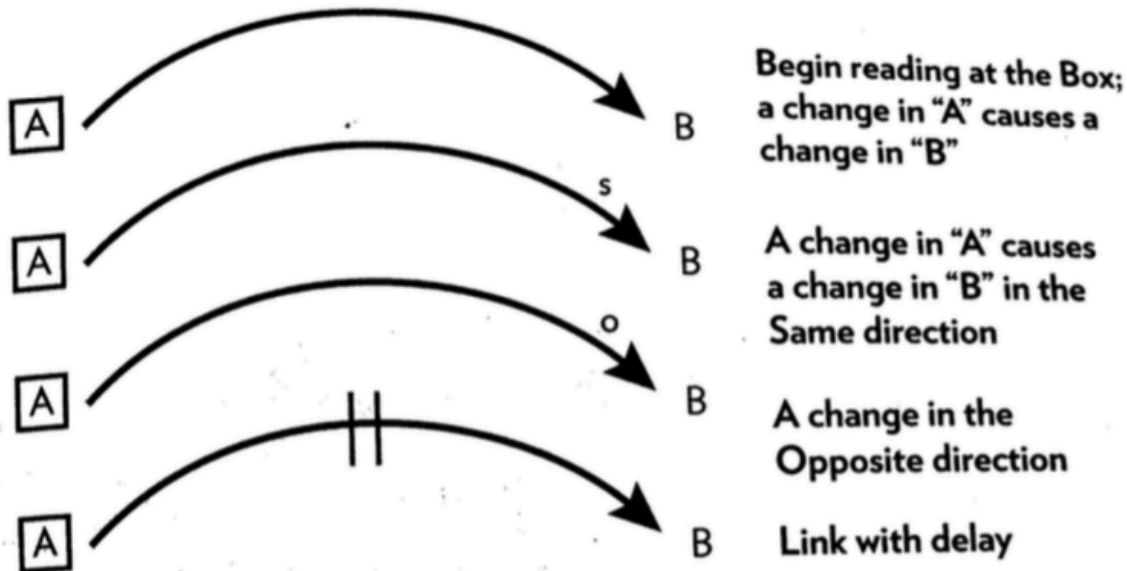
Rule 1: The story that goes with the loop is about amplification, a virtuous or vicious cycle, spiraling growth or decline.

Rule 2: The diagram contains no O's or an even number of O's.

Condition or Performance **B** Drives

Corrects or Adjusts

Corrective Action
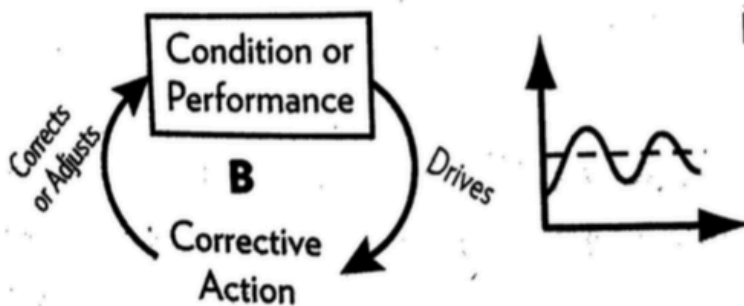
Rule 1: The story describes a balancing, constraining, limiting, or self-regulating process.

Rule 2: The loop diagram contains an uneven number of O's.

Fixes That Backfire

- Story of unintended consequences
- People implement quick fix to reduce symptoms -> quick fix creates long-term unintended consequences that exacerbate problem -> people don't recognize that negative consequences come from the quick fix due to time delay -> when the symptom returns, they incorrectly assume that solution is to implement *more* of the quick fix
- e.g. harsh prison sentences cause the incarcerated to commit more crime upon release
- e.g. in health care, as costs of care increase, there is pressure to reduce the length of hospital stays, causing people to be sent home too early and then readmitted, thereby increasing costs further

FIGURE 4.4 FIXES THAT BACKFIRE. Fixes That Backfire is the story of a quick fix producing unintended consequences that gradually make a problem symptom worse over time. Innovation Associates Organizational Learning
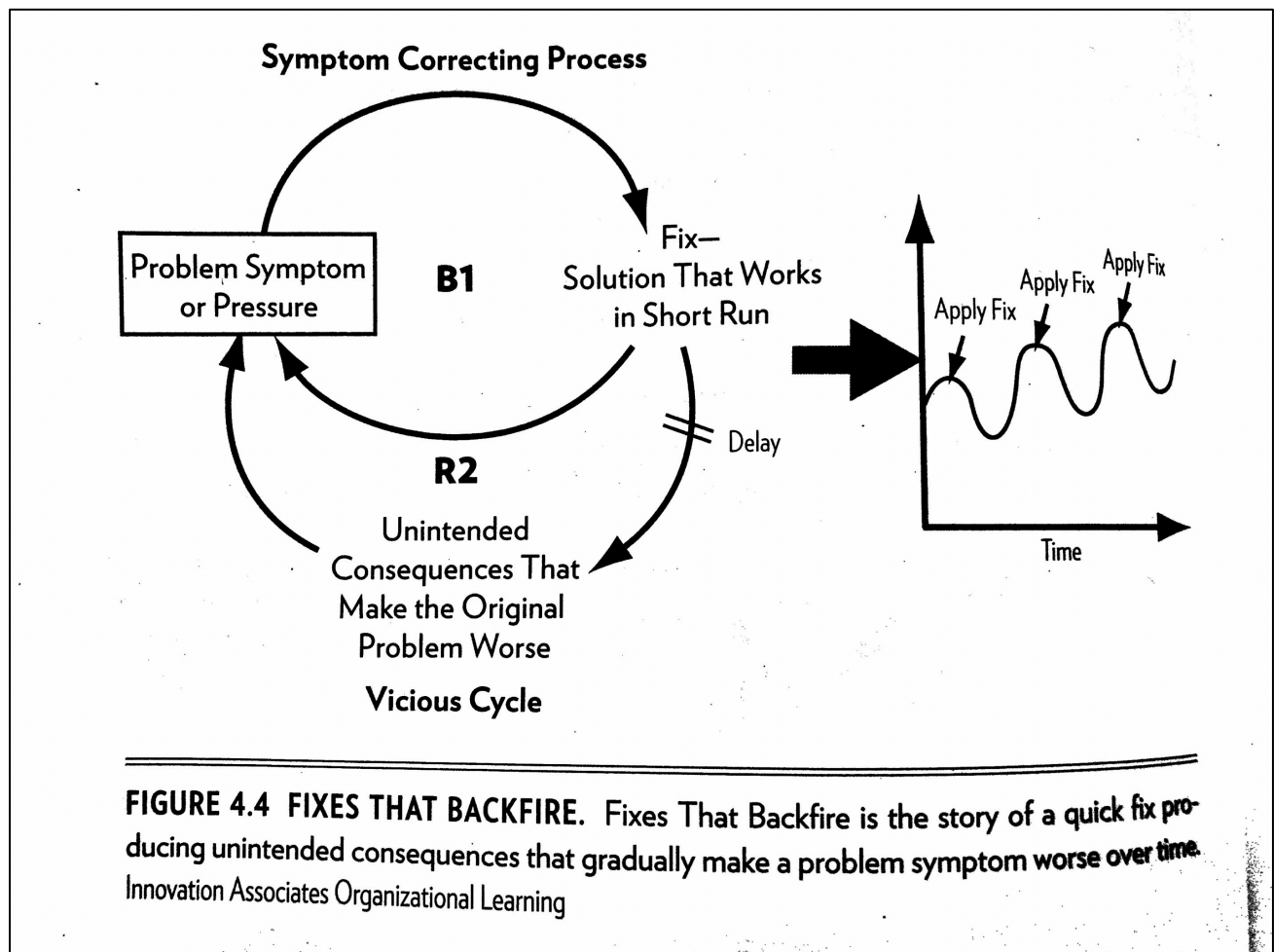
Shifting The Burden

- Story of when people come to depend on quick fixes in favor of long-term solutions
- People are aware a more fundamental solution exists, but can't make the leap to it
- Addressing root problems take longer, is more expensive, and can entail more risk and uncertainty
- e.g. with food aid, there is general understanding in the development community that the fundamental solution to starvation is strong local agriculture. However, receiving food aid undermines motivation to develop local infrastructure, as well as upstart agriculture.

DECIPHERING THE PLOTS OF SYSTEMS STORIES   57
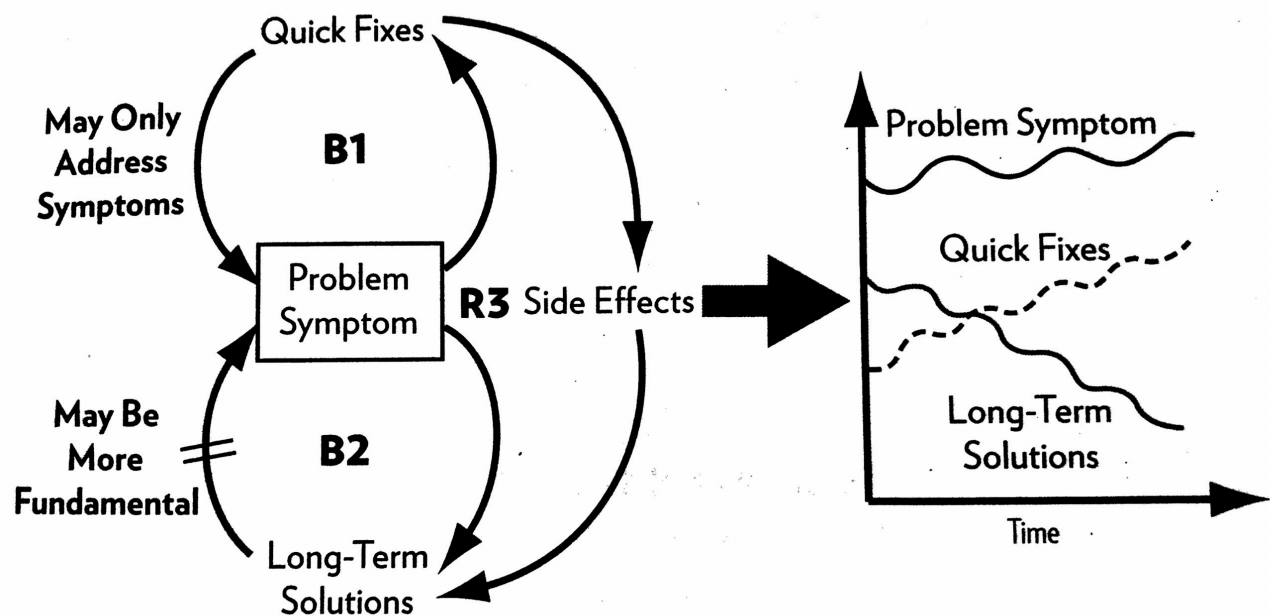
FIGURE 4.5 SHIFTING THE BURDEN. Shifting the Burden is the story of unintended dependency on a quick fix that reduces people's willingness and ability to implement a more fundamental solution. Innovation Associates Organizational Learning

Limits To Growth

- Story of unanticipated constraints; nothing grows forever
- e.g. Scale-up. Once an innovation is proven, it faces capacity, funding, and partnership constraints.
- Key steps leaders can take to mitigate effects of constraints: resist reliance on existing growth engine, identify or ideally anticipate limits, invest to overcome them using resources provided by the current engine or outside sources.
- Chapter 10 describes many strategies for increasing nonprofit capacity and scaling up.
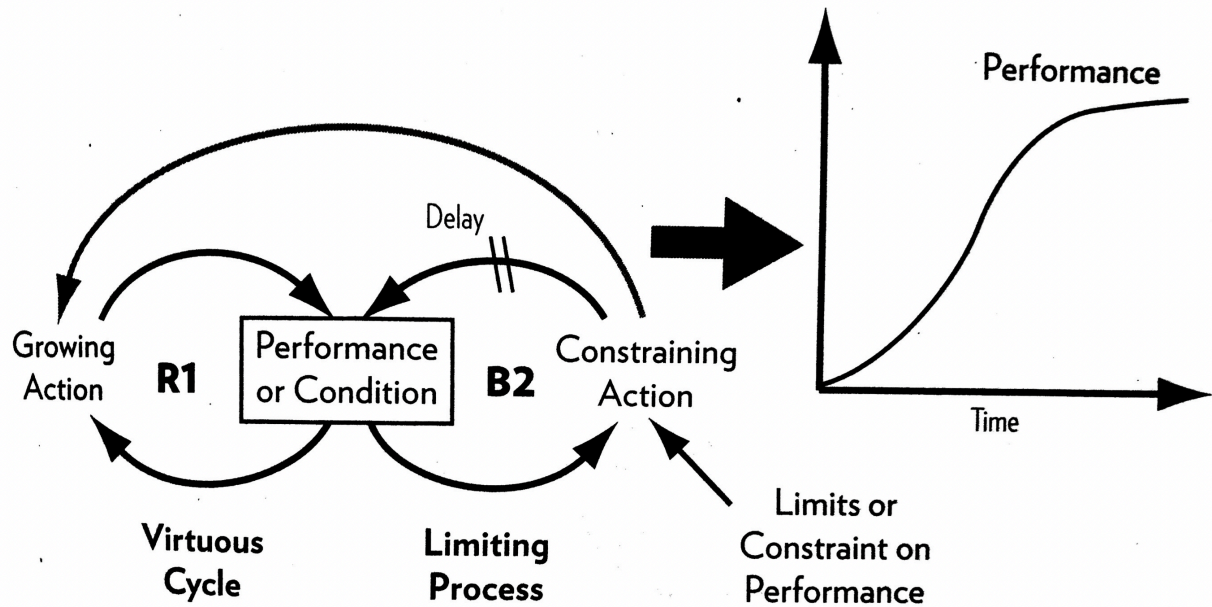
FIGURE 4.6 LIMITS TO GROWTH. Limits to Growth is the story of growth inevitably constrained by limits that must be overcome in order to sustain success. Innovation Associates Organizational Learning

Success To The Successful

- The tendency to concentrate wealth or success in the hands of the few is itself a common dynamic in social systems
- If party A gains an early advantage over party B, A can use that advantage to acquire even more resources
- Meanwhile, party B begins at a disadvantage that grows over time.
- Structural racism: the normalization and legitimization of an array of dynamics—historical, cultural, institutional, and interpersonal—that routinely advantage whites while producing cumulative and chronic adverse outcomes for people of color
  - e.g. gerrymandering
  - Studies show that the best way to fight inequality is to give these families help early on, even before birth
- While it is tempting to associate the Success to the Successful dynamic with capitalism, the tendency exists in most societies: capitalist, communist, and traditional. Sustainable societies moderate it through various redistributive mechanisms that enable all members to live in relative balance.
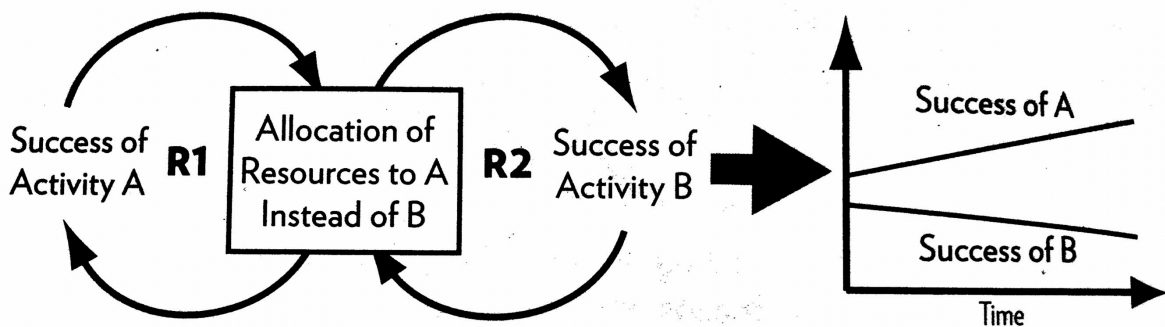

FIGURE 4.7 SUCCESS TO THE SUCCESSFUL. Success to the Successful explains how one party's success and another party's failure can be so closely linked. Innovation Associates Organizational Learning

Accidental Adversaries

- The story of two prospective partners who gradually and inadvertently become enemies
- When Party A adopts a solution that improves its own performance, unintentionally obstructing Party B's success, the ideal situation where they contribute to each others' success is broken. In turn, B tries to improve it's own situation at the cost of A. Vicious cycle.
- e.g. tension between elected officials and civil servants. They rely on each other, but shifting political administrations make it difficult for civil servants to fulfill outcomes amidst election cycles.
- In an ideal world, both groups would work together to integrate, improve, or retire fragmented or antiquated laws and policies; establish shared strategic plans and goals that are both long- and short-term; and utilize all existing resources on behalf of the mission and strategic goals.
- Keys to strengthening partnerships: clarify potential benefits of the partnership to both parties, emphasize problems caused by both sides have not been intentional, and support both groups to develop solutions to their respective problems in ways that do not undermine the other group.

FIGURE 4.8 ACCIDENTAL ADVERSARIES. Accidental Adversaries describes how a promising relationship can unwittingly deteriorate into an adversarial one. Innovation Associates Organizational Learning
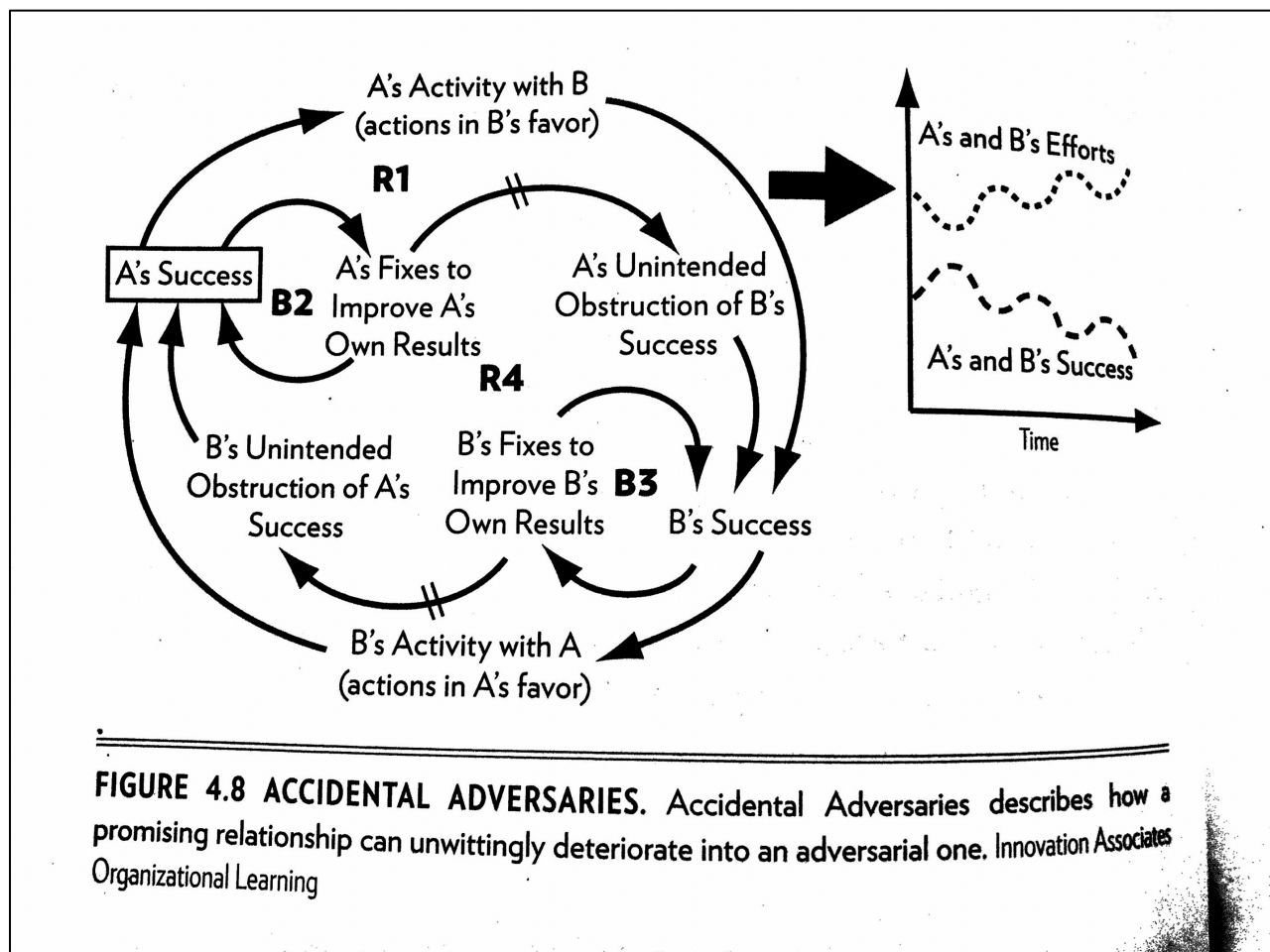
Other Systems Stories

- Drifting Goals
  - Story of an unintentional drift to low performance
  - Special case of Shifting the Burden where the easiest alternative to implementing a long-term fundamental solution is to lower the goal of the system
  - e.g. We have come to accept polarization in US politics, which has threatened functioning of the government more than once. We allow this at the expense of effectively challenging the electoral process and the influence of money on political influence.
- Competing Goals
  - Comes in two forms: conflicting goals and multiple goals
  - Conflicting goals: impossible to achieve two different goals by taking the same action, e.g. defeating enemy vs. peaceful coexistence; e.g. Israelis and Palestinians who prefer peaceful two-state solution are gradually drowned out by extremists on both sides who want to eliminate and dominate the other side
  - Multiple goals: problem of overload; people trying to accomplish too many goals and therefore being ineffective in achieving any of them.
- Escalation
  - The story of unintended proliferation: the harder you push, the harder your adversary pushes back
  - Escalation describes efforts to dominate or gain revenge on the other party
  - e.g. arms races and wars and "race victimhood," found in identity-based conflicts where each side seeks to demonstrate it is the more affected victim of others' aggression. Two sides of the same coin: oppressing from the victim position as a way of justifying aggression.
- Tragedy of the Commons
  - Story of depleting a collective resources that no party feels individually responsible for maintaining
  - e.g. overharvesting, polluting, exhausting topsoil
  - e.g. tendency of individual departments to place excessive demands on a centralized special resource (such as IT), thereby undermining the effectiveness of that resource over time.
- Growth and Underinvestment
  - Story of self-created limits
  - e.g. an organization investing in direct services instead of expanding its capacity
- The Bathtub Analogy
  - The level of water in a bathtub (or carbon dioxide in the atmosphere, or homeless people in a city, etc.) is governed by the relative flow of water into and out of the tub. If you want to change the level of water in the tub you have to change the relative rates at which water flows in and drains out.

The Stories Behind the Story

- Dynamics are perpetuated by peoples' *beliefs* and *assumptions* about how things should work, and their underlying *intentions*. A system behaves the way it does in part because people are trying to prove their assumptions are true.
- The first step in shifting dynamics is to become aware of them and one's role in perpetuating them

TABLE 4.1. SUMMARY OF SYSTEMS ARCHETYPES

Virtuous/Vicious Cycles	**Amplification and Reinforcement:** A reinforcing process producing success or disaster.
Balancing Process	**Correction:** We try to reduce the gap.
Fixes That Backfire	**Unintended Consequences:** The long-term negative consequences of a quick fix.
Shifting the Burden	**Unintended Dependency:** The quick fix we become addicted to.
Limits to Growth	**Unanticipated Constraints:** The limiting mechanism on spiraling growth.
Success to the Successful	**Winner Takes All:** Your success produces my failure.
Accidental Adversaries	**Partners Who Become Enemies:** Two parties want to cooperate, but each sees the other undermining its success.
Drifting Goals	**Inadvertent Poor Performance:** Actual and desired performance levels gradually fall.
Competing Goals	**Conflicting or Multiple Commitments:** Trying to satisfy conflicting goals or achieve too many can lead to accomplishing none.
Escalation	**Unintended Proliferation:** The harder you push, the harder the competitor pushes back.
Tragedy of the Commons	**Optimizing Each Part Destroys the Whole:** Everyone takes advantage of a resource that doesn't belong to anybody.
Growth/Underinvestment	**Self-Created Limits:** We push on the growth side and underinvest in the capacity to grow.

Source: Innovation Associates Organizational Learning and Bridgeway Partners

Part Two – The Four-Stage Change Process

Chapter Five – An Overview of the Four-Stage Change Process
- In the summer of 2006, Stroh (the author) supported a group of community leaders to develop a ten-year plan to end homelessness. Homelessness decreased by 14 percent *despite* a 34 percent increase in unemployment due to a newly formed organization that aligned all efforts
- Why successful? Proactive community effort that engaged leaders in major sectors, homeless people themselves, and systems analysis that enabled stakeholders to agree on shared vision

Convening and Thinking Systemically
- The four-stage change process/approach can support anyone interested in practical action and performance improvement
- Leaders of social change recognize the power of convening multiple and diverse stakeholders

The Four-Stage Change Process
- Overview:
  - Building Foundation for Change - Readiness
  - Facing Current Reality - Understanding and Acceptance
  - Making an Explicit Choice - Commitment
  - Bridging the Gap - Focus, Momentum, Correction
- This model proposes that the energy for change is mobilized by establishing a discrepancy between what people want and where they are
- If people hold to the vision of what they want and are simultaneously clear and candid about where they are, then the creative tension will tend to resolve in favor of what they want
- The creative tension model is expanded into a four stage change process where stakeholders
  - Build a foundation for change and affirm readiness for change
  - Clarify current reality at all levels and accept their responsibilities for creating it
  - Make an explicit choice in favor of the aspiration they espouse
  - Begin to bridge the gap by focusing on high-leverage interventions, engaging additional stakeholders, and learning from experience
- Stage 1
  - Purpose: build a foundation for change
  - Engage Key stakeholders
  - Establish common ground by creating initial pictures of what people want to achieve and where they are now; helpful to provide overview of what is and isn't working now
  - Build peoples' capacities to collaborate with each other
- Stage 2
  - Purpose: help people face current reality
  - Identify people to interview about the history of the current situation and clarify what questions to ask
  - Organize and begin to improve the quality of the information
  - Develop a preliminary systems analysis of how different factors interact over time to support or undermine the vision
  - Engage people in developing their own analysis as much as possible
  - Uncover the mental models that influence how people behave
  - Create catalytic conversations that stimulate awareness, acceptance, and alternatives
- Stage 3

- Purpose: help people make an explicit choice in favor of what they really want
- Identify costs of changing, such as long term investments in effort, time, money
- Compare this with benefits of change and the costs of not changing
- Create both/and solutions that achieve the benefits of both—or be willing to make hard trade-off between them
- Make an explicit choice and bring it to life though a vision that illuminates what people feel called to or simply wish to create
    - Stage 4
    - Purpose: help people bridge the gap between what they deeply care about, and where they are now
    - Propose and refine high-leverage interventions with community input
        - Increase peoples' awareness of how the system functions now
        - Rewire causal feedback relationships
        - Shift mental models
        - Reinforce the chosen purpose through updated goals and plans, metrics, incentives, authority structures, and funding
    - Establish a process for continuous learning and outreach
        - Engage existing stakeholders on an ongoing basis
        - Develop implementation plan that incorporates demonstration projects
        - Evaluate and revise the plan regularly with input from current stakeholders
        - Expand stakeholder involvement by tapping additional resources and scaling up what works

Chapter Six – Building a Foundation for Change
- People actually have two agendas: their public one to address the issue, and their private one to optimize their part of the system. It is important to distinguish these two agendas.
- How do you address challenges of different interests and perspectives to build a strong foundation for change? How do you ensure you invite the right people and develop their ability to work together?

Engage Key Stakeholders
- Key stakeholders are people and organizations that affect and are affected by the issue
- Diversity is key because systems depend on it to innovate
- A stakeholder map is a simple tool to guide the engagement process and expand participation. Breakdown and rate their: current level of support for the cause, the level of support you desire them to have (-3 to +3 scale), their motivations, and what you can do.
- Conveners need to address several challenges in with large groups:
    - One-time events are less effective than regular virtual events
    - Asking people to propose reforms can lead them to think they are not part of the system; enable them to see they are part of the problem
    - Reformers blame powerful stakeholders who represent the status quo for their own inability to effect change. Work with this resistance by: legitimizing and addressing their concerns directly, influencing them through others, and engaging them at critical phases in the process.

Establish Common Ground
- Develop an initial appreciation of why people are coming together, agree on key realities

- Clarify the mission, vision, values of the convening group on behalf of stakeholders to develop a shared sense of direction
- Help provide a strong foundation for change by creating common context for collaboration and creative tension

Build Collaborative Capacity
- Improve relationships among parts of a system, don't just optimize individual parts
- Improving the whole requires people feel comfortable sharing information that is timely, accurate, complete
- Develop systemic thinking; support people in seeing the bigger picture
- Develop productive conversations around difficult issues
    - Recognize the world is more complex than people think
    - Use evidence-based approach
    - The Ladder of Inference is an excellent tool for helping people distinguish what they think from the larger reality around them
- Establish that you care about the others' views; this will allow you to be more effective advocating your own
    - Contribute to peoples' understanding by advocating your view
    - Share what you know and invite others to comment on and potentially enhance your knowledge
    - Effective advocacy involves understanding and making transparent your own ladder of inference so that others can add to and improve upon the data, reasoning, and conclusions you have drawn
- Ladder of Inference:
    - Data -> Data selected -> Meaning Added -> Assumptions Made -> Conclusions Drawn -> Actions/Recommendations Advocated -> Results
- Cultivate a viewpoint of responsibility
    - Taking responsibility for a problem doesn't mean blaming yourself for it, it means empowering yourself
    - Respect, inquiry, and empathy are the best keys to use first to open the door of social change

Chapter Seven – Facing Current Reality: Building Understanding Through Systems Mapping
- Too often people argue for solutions without a deep appreciate for why/how the current system operates
- Three key tasks of facing current reality:
    - Identify people to interview about history of the current situation
    - Organize and begin to improve the quality of information through questions
    - Develop preliminary systems analysis of how different factors interact over time to support or undermine achievement of a vision

Establish Systems Interviews
- Stakeholders with a wide range of views will lead to success, richer picture
- Learning from a diverse group of stakeholders builds understanding, develops relationships required to shift how system operates
- Interviews allow you to uncover reasoning behind conclusions, as opposed to surveys

- Find patterns: oscillations, S-shaped growth, fast growth, no growth?
- State your definition of the problem by completing the following sentence
  - Why has X been happening despite our best efforts to achieve a different goal?
- Uncover history of the problem, previous attempts to solve it
- Uncover what is already working
- Explore other perspectives through the lens of the interviewee
- What is the apparent purpose of this system?

Organize Information
- Listen for what is curious, confusing, or contrary among interviewees
- Distinguish measureable data from how people interpret these data
- Identify key variables, critical success factors, key indicators
- Look up recognizable story lines or archetypes

Develop a Preliminary Systems Analysis
- Deepen understanding of why people are not succeeding despite best efforts
  - These answers/insights become catalytic conversations
  - Catalytic conversations lead to creativity about how challenges can be overcome
  - Example: map out vicious cycles produced by mass incarceration (unintended consequences)
  - Example: map out effect of temporary shelters on homelessness (unintended dependency)
  - Example: affordable housing for rural communities (limits to growth)
  - Example: statewide early childhood development system for all (success to the successful)
  - Example: Iowa Department of Education and Area Education Agencies (accidental adversaries)
- The Bathtub Analogy
  - Useful when attention must be given to the flows of factors over time
  - Reduce inflows, increase speed of outflows
  - Increase inflows, decrease speed of outflows

How to Balance Simplicity and Complexity
- Identify the case that applies – simple enough to understand, complex enough to capture
  - One narrative archetype
  - One narrative archetype with additional loops around the same story
  - Multiple narrative archetypes
  - Bathtub – combination of inflows and outflows
  - Interdependence mapping
  - Computer simulation

Chapter Eight – Facing Current Reality: Building Support by Bringing the System to Life

- Systems maps are helpful but people may not always embrace the insights they offer since they may be abstract, difficult to accept, or difficult to communicate
- Meet these challenges by engaging people to develop their own analysis, uncovering the mental models the influence how people behave, and have catalytic conversations that stimulate awareness, acceptance, and alternatives

Engage People in Developing Their Own Analysis

- When leading system mapping, proceed with the goal of engaging people to develop their own analysis
- Rather than presenting your findings from the outset, consider how the group might arrive at similar insights to your own
- Ask them to write variables and draw connections between the most important cause-and-effect relationships
- Anchoring the analysis with a story is effective in larger groups
- It is important to position the system map as a catalyst for conversation, rather than a definitive answer
- Refine the map through collaboration
- Maps can enrich and expand peoples' understanding, or even shift it profoundly

Surface Mental Models

- "Reality is nothing more than a collective hunch." —Lily Tomlin, comedienne
- Our assumptions and beliefs drive the cause-effects in our life e.g. company downsizing might scare some, but empower others depending on what they believe about their own value to the company
- Encourage people to locate each mental model on a specific cause-effect link if possible and identify stakeholders with that particular belief; include the beliefs that play into each relationship on the system map
- Six different paradigms summarize peoples' diverse views:
    - Defiance
    - Fear
    - Entitlement
    - Desperation
    - Ignorance or functional illiteracy
    - Recognition
- Recognition promises constructive solution

Create Catalytic Conversations

- The purpose of systems mapping and inquiry into underlying mental models is to help stakeholders create catalytic conversations

- Instead of rehashing old discussions about resources and who to blame, new conversations need to emerge that deepen awareness, cultivate acceptance, and develop new alternatives
- People learn to see the system more comprehensively, usefully, accept their responsibility for issues, and expand their views about what they might do differently
- Deepening Awareness
    - System map builds deeper awareness by helping stakeholders understand non-obvious interdependencies
    - Adding mental models brings unquestioned assumptions to the surface
- The following questions prompt catalytic conversations:
    - What new insights have emerged about why the problem persists despite our best efforts to solve it? How do we see things differently?
    - What is surprising?
    - How is our group in part responsible, albeit unwillingly, for the issue?
    - What challenges do these dynamics present?
    - What new opportunities do they offer?
- Cultivate Acceptance
    - Accepting responsibility for your contribution to the current dynamics is the first step because it supports interdependence and long-term thinking
    - "The price of power is responsibility." —Winston Churchill
    - Compassion and confrontation support people in developing acceptance
    - It is important to foster confrontation without contempt; confrontation is founded on compassion
- Developing New Alternatives
    - Willingness and ability to develop alternative solutions are founded on awareness and acceptance
    - When you follow the previous steps in this chapter, people naturally begin to think about new solutions

Chapter Nine – Making an Explicit Choice
- The work doesn't stop at clarifying peoples' shared aspiration and their initial picture of current reality
- Common ground is vital, but so is aligning each stakeholder's highest aspiration with their own immediate self-interests
- How do we help people make an explicit choice in favor of what they most profoundly want?
    - Answer: connect people even more closely with both their aspirations and currently reality by uncovering the purpose that inspires them shapes their everyday actions
    - Help them understand the payoffs to the existing system, compare the case for the status quo with the case for change, create solutions that serve both their long-term and short-term interests, make an explicit choice in favor of the higher purpose by weakening the case for the status quo and strengthening the case for change

Understand Payoffs to the Existing System
- Systems are perfectly designed to achieve the results they are achieving right now

- Costs of change that people tend to avoid include financial investment, discomfort of learning new skills and creating different work, having to act interdependently instead of independently, and being patient while waiting for investments to demonstrate returns over time
- Example: building better shelters actually hinders *ending* homelessness

Compare the Case for Change with the Case for the Status Quo
- The case for change includes the benefits of changing and the costs of not changing
- Complete a cost-benefit matrix

Create Both/and Solutions—or Make a Trade-Off
- People ideally want to keep the benefits of the status quo while also realizing the benefits of change; there can be a place for both/and solutions provided the overall system is incentivized to solve the core problem as soon as possible
- However, trade-offs are more common; decide to give something up to reach aspirations
- Things often have to get "worse" before they get better

Make an Explicit Choice
- You can support people to let go more easily by weakening the case for the status quo, and then strengthening the case for change
- A systems map naturally helps weaken the case for the status quo by showing how peoples' current thinking and actions tend to lead them away from achieving the purpose they aspire to
- Strengthening the case for change involves two steps that deepen peoples' connections with their highest aspirations:
    - Presencing: the blend of sensing and presence, means to connect with the highest future possibility and bring it into the now; perceive from a future possibility that depends on the current reality; receive
    - Visioning: separate what you want from what you think is possible, focus on what you want versus don't want, focus on the results instead of the process, include the consequences you want, see/experience the vision in the present
        - How are the people you want to serve being served? What are they doing, seeing, feeling, hearing, saying?
        - How does serving those people contribute to other stakeholders and society as a whole?
        - What is your group doing differently? What are you seeing, feeling, thinking, and hearing?
        - What am I personally doing differently? How does realizing this vision serve my highest self?

What Can You Do When People Are Still Not Aligned?
- Alignment is not guaranteed by steps above
- Remember alternatives from chapter 6:

- Collaborate indirectly by legitimizing and addressing others' concerns, then seeking to influence them through mutually respected third parties and/or engage them at critical phases
- Work around the people you cannot work with
- Work against them through such channels as advocacy, legislative policy, and nonviolent resistance
- Not everyone needs to agree at once on a new course of action in order for change to occur
- The 15 percent that are innovators and early adopters can build sufficient momentum

Chapter Ten – Bridging the Gap
- Example: nonprofit health care organization wants to incorporate technology across loose confederation of hospitals; people were overcommitted and under-delivering
- The challenge of work overload is not limited to people committed to social missions
- We try to do *everything* we can with little heed to strategic focus and sustainable energy
- Goals escalate, priorities proliferate and shift, quality suffers, and tensions mount as people fail to come through on agreed-upon tasks
- The good news is that systems shift not as a result of making many changes, but by sustaining focus on only a few changes over time: leverage points

Identify High-Leverage Interventions
- Increase awareness of how the system currently functions
- Rewire critical cause-effect relationships
- Shift mental models
- Reinforce the chosen purpose by aligning goals, metrics, incentives, authority structures, and funding to support

Increase Awareness
- Levers for change: uncover non-obvious interdependencies that influence performance, appreciate differences between short- and long-term impacts of an action, recognizing your own responsibility, acknowledging payoffs of the status quo
- The health care organization discovered their difficulty stemmed from tendency to overcommit
- Ask questions that are characteristic of catalytic conversations; see chapter above

Rewire Cause-Effect Relationships
- Feedback relationships need to created, reinforced, and destroyed to motivate new behavior
- Interventions to common social change archetypes:
  - Fixes that Backfire
    - Consider negative long-term unintended consequences of quick fixes, choose a fix that appears to have none or fewer
    - Continue to use the quick fix if you must, but consider waits to mitigate its negative consequences

- Uncover the root cause of the problem symptom that a fix is intended to address; solve underlying problem if possible
    - Shifting the Burden
        - Reduce dependence on the quick fix.
        - Increase investment in fundamental solution by creating vision of an alternate future that compels this investment over the long term
        - Design fix in such a way that it builds toward a more fundamental solution
    - Limits to Growth
        - Anticipate potential limits even as you build engines of growth
        - Invest in overcoming these limits *before* they become a problem
        - Fund investment from an existing growth engine
    - Success to the Successful
        - Develop an overarching goal that links the achievements of A to B
        - Enable the more successful party A to recognize the negative impacts of inequity on it, including economic costs and social instability
        - Support party B to cultivate neglected sources of power such as tight-knit family and social traditions, numbers and hence votes, and moral rightness
        - Create systems that promote equity of opportunity and access
        - Invest in A and B based on their potential for success versus current performance
    - Accidental Adversaries
        - Clarify or remind both groups how they can benefit from partnering with each other
        - Point out the way they undermined each other are unintentional
        - Support both groups to look for win-win solutions

Shift Mental Models
- Surface and respect current beliefs, assess based on utility and validity
- Ask, "Do these mental models help us achieve what we want now?"
- Stimulate alternative views
- Develop a vision of what we want now and the mental models that would support it
- Conduct and learn from experiments
- Example: Intervention for a Vicious Cycle:
    - Identify a weak link
    - Redirect the causal factor in this link by creating a new goal
    - Implement reinforcing actions to sustain momentum

Reinforce the Purpose
- Define metrics and incentives designed to optimize the whole system instead of just constituent parts
- Chart decisions and accountability

Establish a Process for Continuous Learning and Outreach

- Organizations need to follow through on implementation efforts
- Learn from experience, expand resource pool, scale up what works
- No paradigm is "true" or "complete" – remain flexible
- Visions evolve, current reality changes, and new information and conditions emerge
  - The best we can do is to clarify what we want, plan how to proceed, take action, and learn from what happens
- Continuous learning at the local level involves:
  - Extensive and ongoing inclusion of stakeholders
  - A clear strategic plan with specific projects in support of the plan
  - Strong focus on data to support evaluation against goals and metrics
  - Quarterly and annual evaluations that inform updates to the plan

How to Integrate Multiple Interventions
- "Where do we start?"
  - Awareness uncovers interdependencies to be rewired
  - Rewiring is supported by understanding and then shifting the mental models that influence key cause-effect relationships
  - Reinforcing the purpose facilitates implementation of changes in connections and assumptions
  - Continuous learning and outreach enable people to make necessary course corrections in systems that are ultimately too complex and dynamic to control
- It can also be helpful to create small, more implementable changes early on as long as they are positioned within a long-term strategy
- Organize interventions in causal loops that feed forward instead of backward

Part Three – Shaping the Future

Chapter Eleven – Systems Thinking for Strategic Planning
- Insights about the past don't necessarily provide a clear-cut, definitive path forward
- Sometimes organizations are overwhelmed by choices and lack of resources
- It can helpful in these cases to apply systems thinking prospectively, take into account:
  - Reinforcing and balancing feedback loops
  - Optimizing relationships between parts of the system rather than individual parts
  - Integrate multiple success factors into sequenced actions over time
  - Take time delay into account
  - Include plant to make short-term and long-term sustainable improvements
- There are two core theories of systemic change that meet three challenges:
  - Organizing the leverage points determined by root cause analysis
  - Integrating the numerous critical success factors required to create something new
  - Streamlining choices among too many programs or priorities

Two Systemic Theories of Change
- Reinforcing feedback/Success Amplification
    - Factors of success build on one another over time
    - Example: Iowa Department of Education
    - Generate new engines of success over time, beyond initial success
    - By experiencing initial dreams come true and affirming new possibilities, people can raise their goals
    - Address limits early so you can push beyond/avoid them later
- Balancing feedback/correcting shortcomings to achieve a goal
    - Close gaps/discrepancy between status quo and desired future before creating engines of success
    - Identify time delays, remain persistent

Organize Leverage Points
- Following two cases demonstrate how groups planned and strategized road maps based on systems analysis of core problems
- Amplifying Strengths in the Collaboration for Iowa's Kids
    - Three reinforcing loops
    - Increase coherence and equity
- Achieving the Goal of a Healthy Community
    - Eagle County Public Health and Environment Department wanted to increase health equity in the county by focusing on vulnerable populations, i.e. children in poverty
    - Identified root causes: forces dragging people down outweighing support, failure of helping organizations to work together, lack of coordination caused waste
    - Map of current reality helped provide insight into high leverage interventions:
        - Increase collaboration
        - Engage vulnerable populations as equals, engage influencers in the community
        - Shift mental models that were hindering progress: "We can't change because of limited resources," racism, classism, "*they* are they kind of people who…", "one size fits all," "the system is too big to change," "health care can't be fixed"
        - Group then identified ways to reinforce improvements

Integrating Success Factors
- Two examples incoming: Success Amplification to build on strong existing relationships in a region to improve food and fitness, and Goal Achievement to improve countywide education
- Building on Strong Relationships to Improve Regional Food and Fitness
    - Kellogg Foundation Food & Fitness program in 2006 to address childhood obesity
    - Fostered collaboration between diverse groups and sustained healthy results
    - Leveraged historically strong relationships
- Creating a Community Where all Children are Loved and Successful
    - The InteGreat! coalition committed to health and success of all children
    - Used Goal Achievement theory of change to create inclusive community

- Coalition identified seven key success factors, four of which addressed relationship building
  - Quality of Community Relationships (among organizations impacting families)
  - Level of Collaboration and Integration
  - Level of Youth Engagement
  - Level of Family Engagement
  - Level of Data-Driven and Evidence-Based Practices
  - Access to Opportunities
  - Equity
- Mapping and identifying success gaps was key

Streamlining Choices
- Example: large child welfare agency was concerned it was spread too thin, budget too low to sustain all programs efficiently
- Connections between programs were distilled into categories, analyzed and used as a basis to streamline
- Identify and eliminate programs that do not fit the strategy
- Transfer discarded programs to other community organizations better suited
- Don't always assign priority/importance at the outset; this may drain energy as certain aspects of an organization may reveal their value over time

How to Refine Your Systemic Theory of Change
- Refining your theory means incorporating theories of other stakeholders and smaller leadership groups, tracking how key elements change over time, and modifying the theory by comparing what you expect will happen with what actually occurs
- Engage in continuous learning by comparing intent to what actually occurs; rethink/adjust cause-effects as needed

Chapter Twelve – Systems Thinking for Evaluation
- Funders want to know whether or not their investments are making a positive difference, and recipients want to show that they are meeting objectives so that they can continue to obtain funding
- Evaluating solutions to social problems is not easy
  - Challenges: complexity, unrealistic goals, lack of funding, failure to monitor and evaluate, concern about uncovering negative evaluations, goals and priorities shift over time
- Still, evaluation remains critical: systems thinking can be used to identify metrics and key indicators that can be tracked over time
- This chapter covers ways to improve evaluation and address challenges above

General Systemic Guidelines
- Use systems thinking to inform your evaluation process in five ways

- Set realistic goals
- Define key indicators and metrics
- Think different about the short and long term
- Look for consequences along multiple dimensions
- Commit to continuous learning
- Set realistic goals
  - Unrealistic goals hurt all parties, create toxic stress and broken agreements
  - Build castles in the sky, then put foundations under them
  - Goals are part of the foundation for ideals; they provide milestones to strive toward
  - No more than three is a recommended rule of thumb
  - Distinguish short and long-term
  - To avoid getting caught in vicious cycles related to overload, deliberately and regularly rebalance workload with available resources
- Define clear indicators and metrics
  - Align them with system purpose
  - Include qualitative and quantitative
  - Break down abstract aspirations into measurable factors
  - Look for leverage points where return on investment is highest
  - Efficiency = outputs/inputs
- Thinking differently about short and long term
  - Six things you can do to determine if short term gains also lead to long term improvements
    - Remember systems exhibit better before worse behavior
    - Ensure problem addresses root causes
    - Inquire what theory of change informed a particular action
    - Ensure time delays are considered
    - Look for early successes that build system-wide capacities
- Look for consequences along multiple dimensions
  - Consequences: intended or not?
  - Are unintended consequences negative?
  - Look for resources that are worth saving/developing, and ones to let go
- Commit to continuous learning
  - If you are a funder, commit to longer-term investments
  - Continue to engage stakeholders and involve new ones
  - Use feedback from experiments to refine your systems analysis and theory of change over time

Tracking Success Amplification
- Organic growth follows an S-curve: initial slow growth, steep growth, maturation
- Most people expect continuous linear growth, which is actually less common, frustrated
- In the first phase, assess common ground and relationships

- Build organization capacity
- Don't get complacent in stage three; identify new engines of growth and overcome limits

Tracking Goal Achievement
- Two characteristic phases: correction (improvement) and reinforcement
- Clarify root causes to correct
- Reinforce momentum when progress is being made

Chapter Thirteen – Becoming a Systems Thinker
- Becoming a systems thinker takes time
- We are born with capacity to see connections and understand time delay
- Three way to become more effective systems thinker
    - Develop system orientation
    - Apply systems thinking for social change with a change management framework
    - Ask key questions to open others to think systemically

Develop a Systems Orientation
- "Social systems are the external manifestation of cultural thinking patterns and of profound human needs, emotions, strengths, and weaknesses" —Donella Meadows
- Mental
    - Develop sense of feedback (web of connections), growth and stability, diversity and resilience, delay, unintended consequences, power of awareness, leverage
- Emotional
    - Use systems thinking to shift from blame to responsibility, empower selves
    - Changing how we think requires humility, curiosity, and courage to take emotional risks: admitting you're not right, experimenting with new assumptions and behaviors, learning from others
    - Accept everyone's views, be compassionate since we all have limited perspectives
- Physical
    - Shared responsibility leads to coordinated action
    - Convene systematically
    - Stimulate catalytic conversations
- Spiritual
    - Systems thinking helps you see that everything is connected
    - You have choice over furthering positive connections or feeding dysfunctional ones
    - Cultivating character strengths is a spiritual practice
        - Curiosity
        - Respect
        - Compassion
        - Awareness
        - Vision

- Courage
- Patience
- Flexibility

Learn by Doing
- Coach and share vocabulary of systems thinking
- Practice systems mapping

Ask Systemic Questions
- Where do our best intentions fall short?
- Why are not as successful as we want?
- What might be our responsibility for obstacles/shortfalls?
- Are there people who share similar aspirations, but different views on nature of the problem/solution? If so, what can we do to help align respective efforts more effectively?
- What can we learn from inquiry into specific events, underlying trends, and deeper systems structure?
- Which stakeholders are we comfortable engaging now, what are their motivations for change?
- How do we increase peoples' understanding of the issue?
- What is the case for the status quo?
- What might we have to sacrifice for the whole to succeed?
- How do we ensure continuous learning and outreach?
- How do we evaluate progress toward our vision using a system lens?
- What do we intend to do next?