# Finding Leverage with systems THINKING

## Improving the Policy Evaluation Process

**Chris Soderquist**

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# Today

- Adaptive Challenges: The need for systems THINKING
- Finding Leverage through systems THINKING
- Applying systems THINKING to the Evaluation Framework
- Q&A

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# Expectations

- systems THINKING is a extensive discipline
- We can only take a very high level view
- I’ll focus on providing you with the motivation to use, and a set of questions that can help you get started
- Learning and applying more of the breadth of systems THINKING tools takes time – but is worth the effort

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# Primary Assertion

- The rigorous and generous application of systems THINKING greatly improve our effectivness anywhere we desire high leverage solutions

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# Technical/Routine Problems vs. Adaptive Challenges


**Routine/technical Problems**

- Easily defined
- An obvious, proven solution
- Often an expert on whom we can call to solve the problem for us

*There is, in other words, a routine for dealing with the problem.*

**Adaptive Challenges**

- Often hard to define
- No clear solution, and different people hold different views about its source
- No expert who can solve the problem for us

*They are fundamentally different.*

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# Why does the distinction between **routine** and **adaptive** work matter?

New procedures, rules, reorganization to prevent another disaster


http://cbsnews1.cbsistatic.com/hub/i/2011/01/28/beb35fcb-a642-11e2-a3f0-029118418759/AP8601281739.jpg

Underlying “can do” culture left untouched


http://cbsnews1.cbsistatic.com/hub/i/2013/02/01/4bb73173-a645-11e2-a3f0-029118418759/Columbia_AP_promo.jpg

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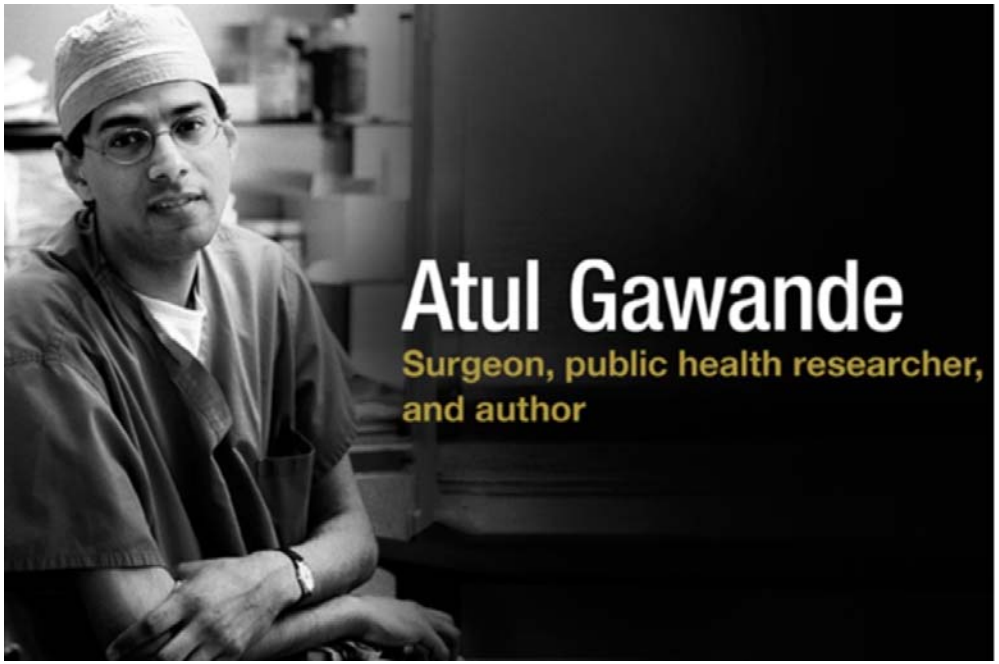
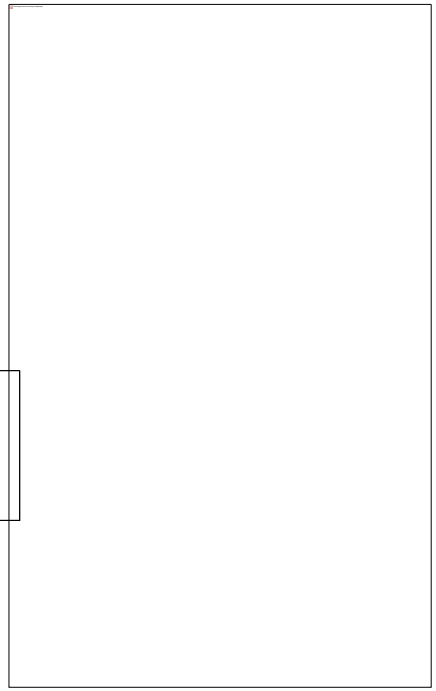
# Why does the distinction between **routine** and **adaptive** work matter?




https://www.gatesnotes.com/~/media/Images/Articles/About-Bill-Gates/Atul-Gawande-Recommended-Reading/Atul-Gawande-Recommended-Reading-600x.jpg?la=en&hash=071947484213DE3B71EE65D11302BBAA43A37413



http://media.oxfam.org.uk/images/products/HighStDonated/Zoom/755021_01.jpg?v=1

Creating a checklist is **routine**, but getting doctors to embrace their use requires an **adaptive** change in the *culture* of healthcare

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Where have you seen examples of initiatives / programs that failed because they attempted to apply a routine solution to an adaptive challenge?
What issues led to the failure?

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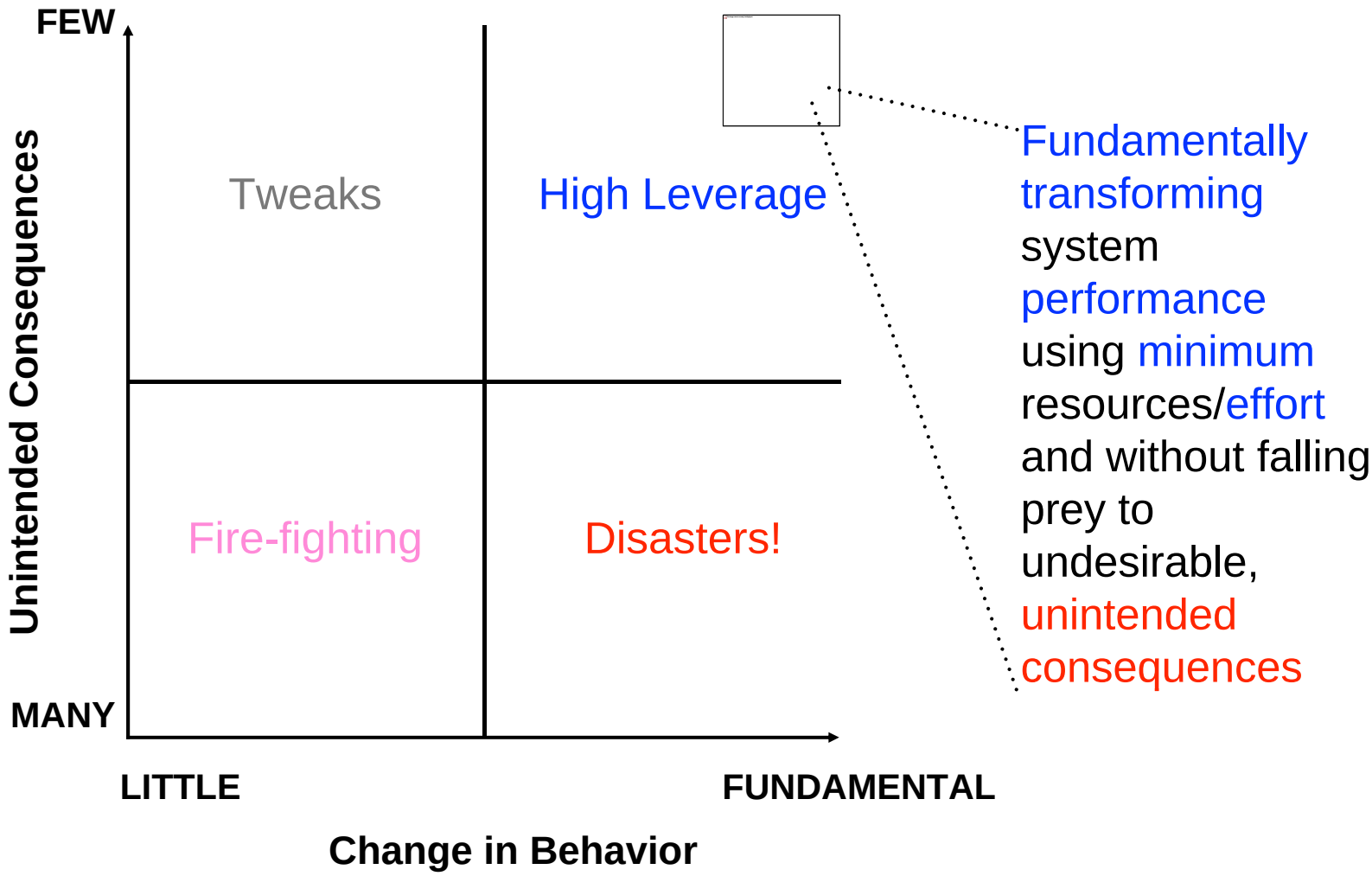
# Impacts of approaches to addressing adaptive challenges

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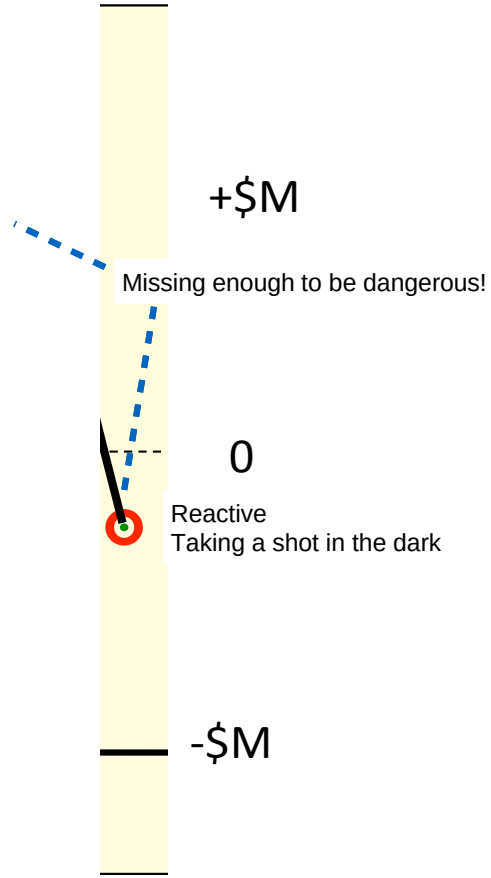
A different system, same input!

*You're on the Executive Team*

# How do you feel?
# What would you do?

Quarterly Profits for
**Our Company**

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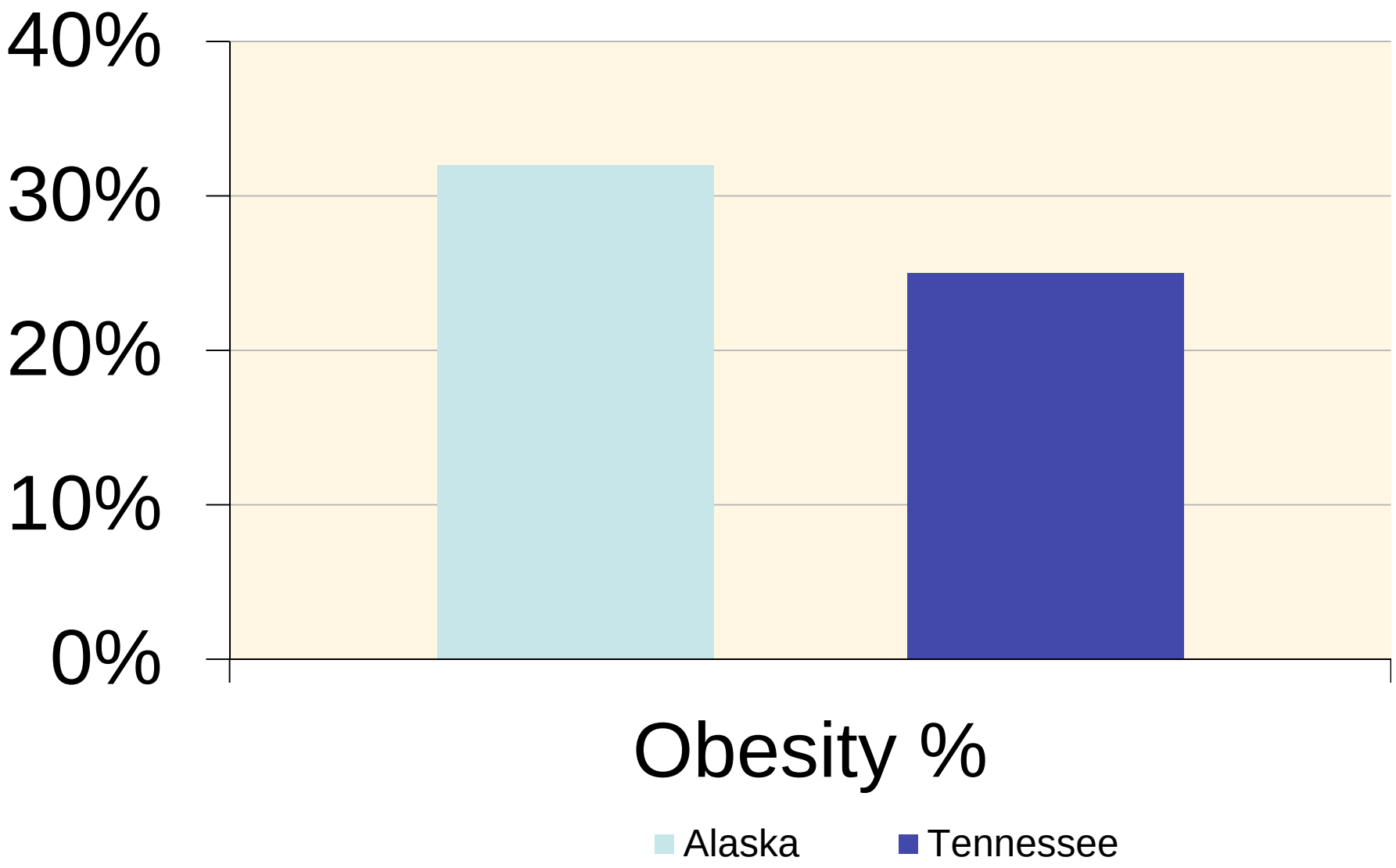
Based on this graph…
What state is doing well in the winnable batle of obesity?
What state would you have coach other states?

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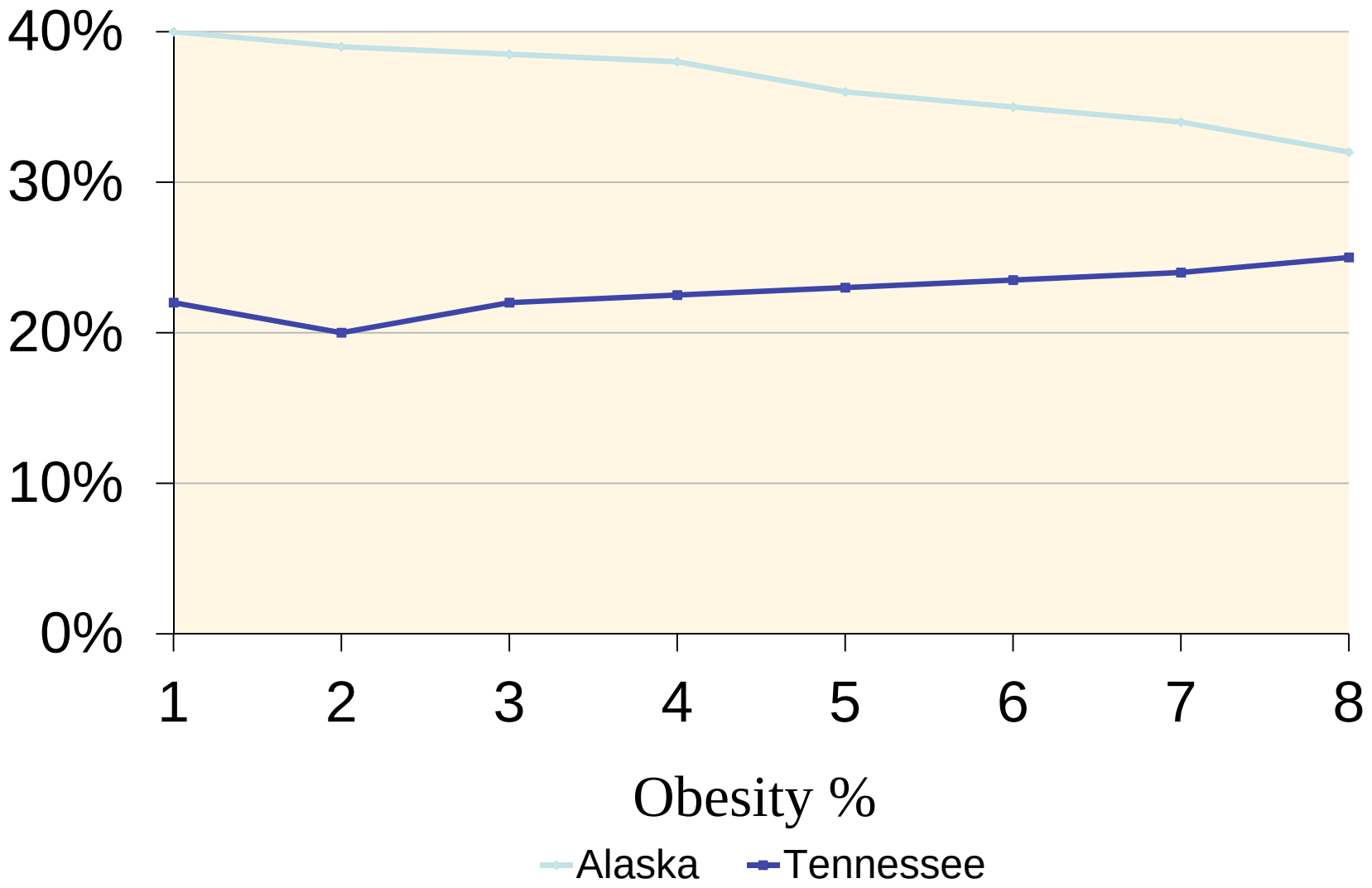


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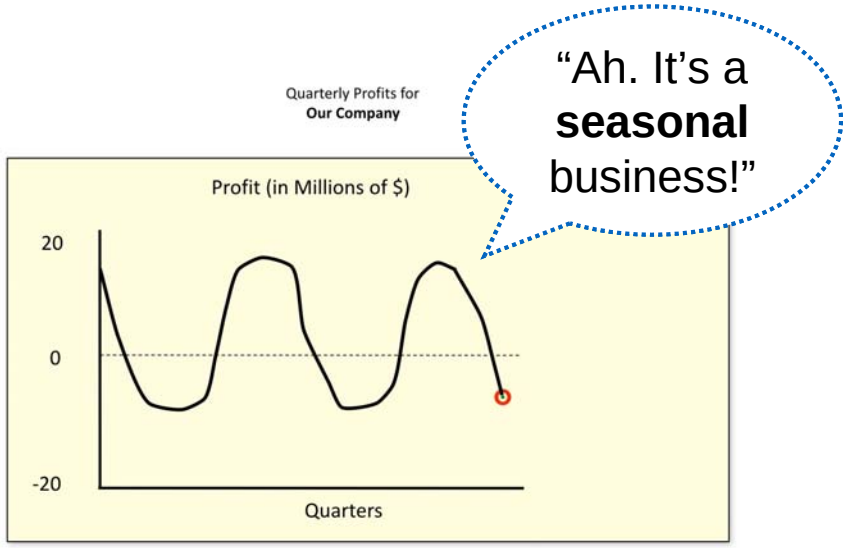
# Systems THINKING helps find leverage by visualizing the structure responsible for the behavior




Even when the structure (rules,policies, resources, beliefs, etc…) is hard to physically see!

In order to apply systems thinking, the issue must have an "over time" component to it.
i.e. How will / do(es) the issue(s) play out over time?

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# To Find Leverage

*You are developing a mental model of how the **structure** is generating the **behavior** of interest*

## What You Do

**Expand Field of Vision**

- **Time**
- **Space**

**Focus on the Physics**

- **Stocks / Flows**
- **Feedback Loops**

## How You Do It

**Build a Shared Picture**

- **Everyone "sees" the same thing**
- **Often use visual tools (graphs, maps)**

**Build confidence**

- **Apply the scientific method**
- **Become "less and less…and less wrong"**

## How You Evaluate

**Make as Simple as Possible**

- **It captures the essence of the issue**
- **All aspects unnecessary to understanding have been removed**
- **Occam's Razor**

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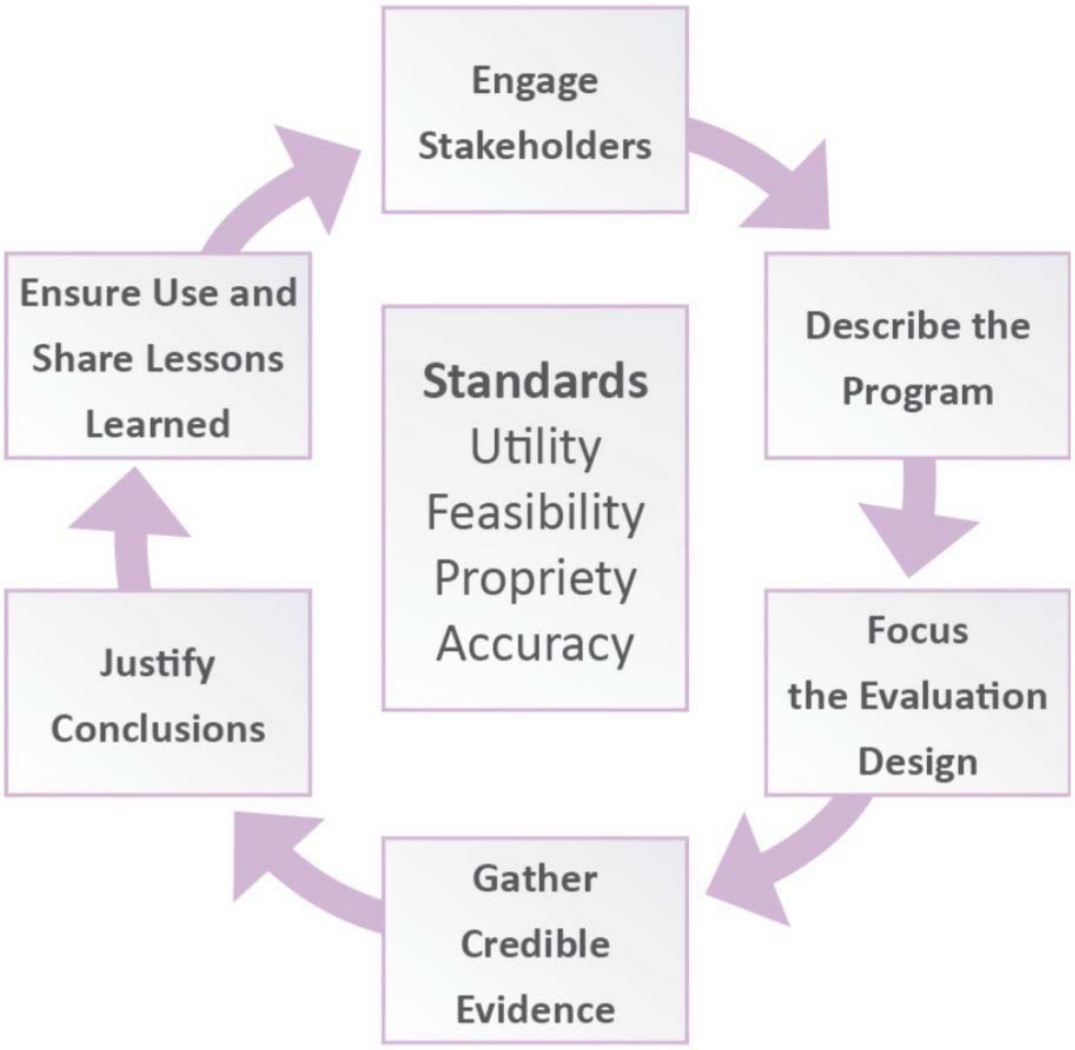
# Application of Systems THINKING Improves Effectiveness of The Evaluation Framework

**Figure 1**. Steps in the CDC Framework for Evaluation in Public Health[4]




**SYSTEMS THINKING PRINCIPLES**

- Expand Field of Vision
- Focus on the Physics
- Build a Shared Picture
- Build confidence
- Make as Simple as Possible

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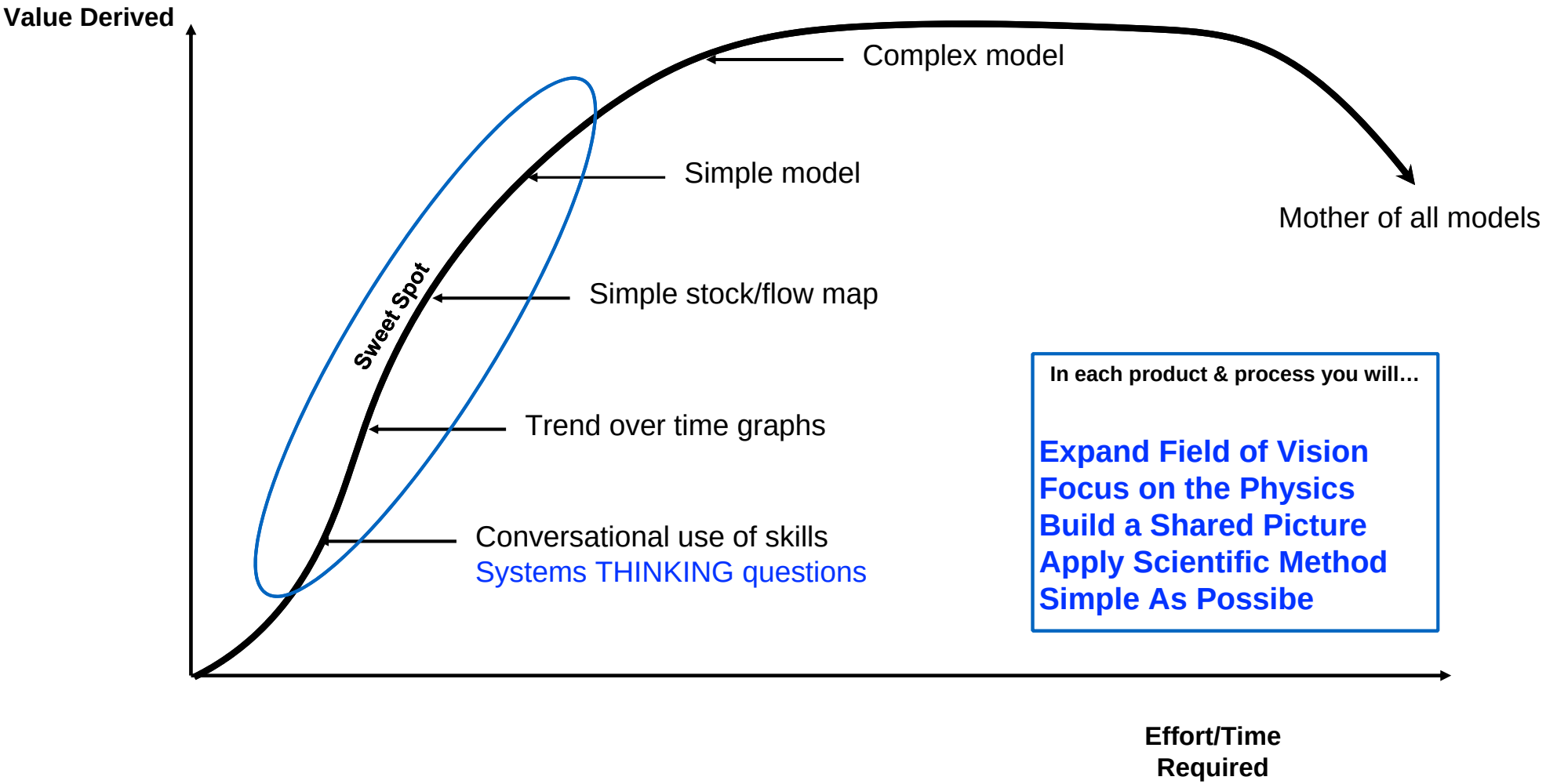
# You can find leverage applying a variety of systems THINKING processes and products

*Barry Richmond's Value to Effort Graph*
*can help you choose what to use under what circumstances*

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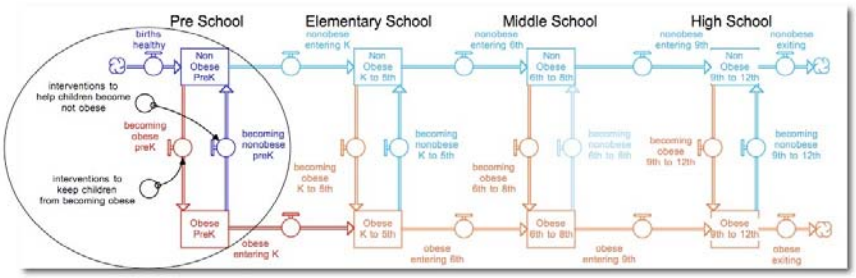
# This session focuses on the Systems THINKING Questions

Value Derived

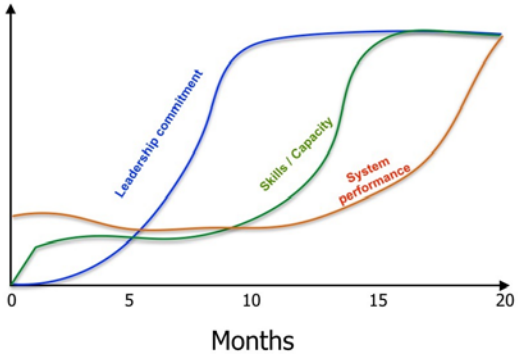
**3**

**Stock and Flow Maps (& simulation models)**




**2**

**Trend Over Time Graphs**




other of all models

**1**

**Systems THINKING Questions**

| | QUESTIONS |
|---|---|
| Expand Temporal View | ? |
| Expand Spatial View | ? |
| Stocks & Flows | ? |
| Feedback Loops | ? |
| Build a Useful Picture | ? |
| Build Confidence | ? |
| Make Useful Sense | ? |

s you will…

sion
Focus on the Physics
Build a Shared Picture
Apply Scientific Method
Simple As Possibe

Effort/Time Required

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# Systems THINKING Questions to Increase the Evaluation Framework's Effectiveness

- Engage Stakeholders
- Describe the program
- Focus the Evaluation Design
- Gather Credible Evidence
- Justify Conclusions
- Ensure Use and Share Lessons Learned

| | (Sample) QUESTIONS |
|---|---|
| **Expand Temporal View** | What are the most significant or troublesome **trends** (patterns of important system performance measures)? They can be tangible or intangible, quantitative or qualitative.<br>What's been the trend for each over the **past several years**? |
| **Expand Spatial View** | What **other perspectives / stakeholders** are concerned about this issue or something related to it?<br>What **other trends** or system behaviors would they see as **related** – perhaps even more important – to the issue? |
| **Stocks & Flows** | If you could **stop time** for a magical moment and looked at the system – counting or measuring something – what would you **focus** on to assess system health?<br>What's **accumulating**? What are the key **conditions**? |
| **Feedback Loops** | Is there an obvious **virtuous** or **vicious** cycle (**Reinforcing** loops?)<br>Is there a "push back" in the system or does it try to stay in **equilibrium**? (**Balancing** loops?) |
| **Build a Useful Picture** | Do we have the **same picture** of this issue, strategy?<br>What do we need to develop that **same page** understanding? |
| **Build Confidence** | How do (are) we build(ing) **confidence** in the theory? |
| **Make Useful Sense** | How do we keep the mental model (explanatory theory) as **simple as possible**, but no simpler?<br>Are there **elements** of the theory that are true, but **not** necessarily a **major factor** in explaining the issue or potential solutions? Can you remove? |

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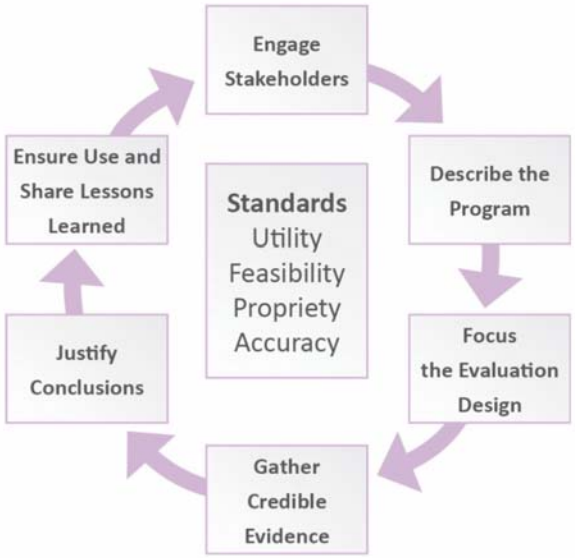
# The full set of Questions

**Figure 1**. Steps in the CDC Framework for Evaluation in Public Health[4]




| | QUESTIONS |
|---|---|
| **Expand Temporal View** | ◦ What are the most significant or troublesome **trends** (patterns of important system performance measures)? They can be tangible or intangible, quantitative or qualitative.<br>◦ What's been the trend for each over the **past several years**?<br>◦ How broad a **time horizon** is useful in order to really understand each? (1 year, 5 years, 10 years, decades?)<br>◦ Where are they **going**?<br>◦ What will be the future **price we pay** if left to continue as expected?<br>◦ How do we want the future to play out? What's our desired trend – dynamic **vision**?<br>◦ How **far into the future** do we need to look **to see** the change we want? |
| **Expand Spatial View** | ◦ What **other perspectives / stakeholders** are concerned about this issue or something related to it?<br>◦ What **other trends** or system behaviors would they see as **related** – perhaps even more important – to the issue?<br>◦ How does this **impact more** than just the area of interest?<br>◦ Think about expanding the area of focus. If we make a change to the issue as you wish, **where else** will there be an impact?<br>◦ Would this (these) be a positive or negative **unintended consequence(s)** / impact(s)? |
| **Stocks & Flows** | ◦ If you could **stop time** for a magical moment and looked at the system – counting or measuring something – what would you **focus** on to assess system health?<br>◦ What's **accumulating**? What are the key **conditions**?<br>◦ In what **direction** are the important accumulations going?<br>◦ What is the **rate of change** of these accumulations or conditions? |
| **Feedback Loops** | ◦ Is there an obvious **virtuous** cycle (where things continue to get better or better)?<br>◦ Or perhaps is there a **vicious** cycle (where things continue to get worse, and are maybe accelerating!)? (both of these first two are **Reinforcing** loops?)<br>◦ Is there a "push back" in the system?<br>◦ Does it appear to be trying to stay in **equilibrium**? (both of these two are **Balancing** loops?)<br>◦ Can we **influence feedback loops** to achieve leverage? |
| **Build a Useful Picture** | ◦ Do we have the **same picture** of this issue, strategy?<br>◦ What do we need to develop that **same page** understanding?<br>◦ Is our understanding clear and **unambiguous**? What's needed to make it more so?<br>◦ Is it **rigorous**? What's needed to make it more so? |
| **Build Confidence** | ◦ How do (are) we build(ing) **confidence** in the theory?<br>◦ Are we able to **mentally simulate**?<br>◦ Would we understand more by developing **stock and flow** maps?<br>◦ Could we **computer simulate** and would that add enough value to warrant the effort? |
| **Make Useful Sense** | ◦ How do we keep the mental model (explanatory theory) as **simple as possible**, but no simpler?<br>◦ Are there **elements** of the theory that are true, but **not** necessarily a **major factor** in explaining the issue or potential solutions? Can you remove? |

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# Q&A

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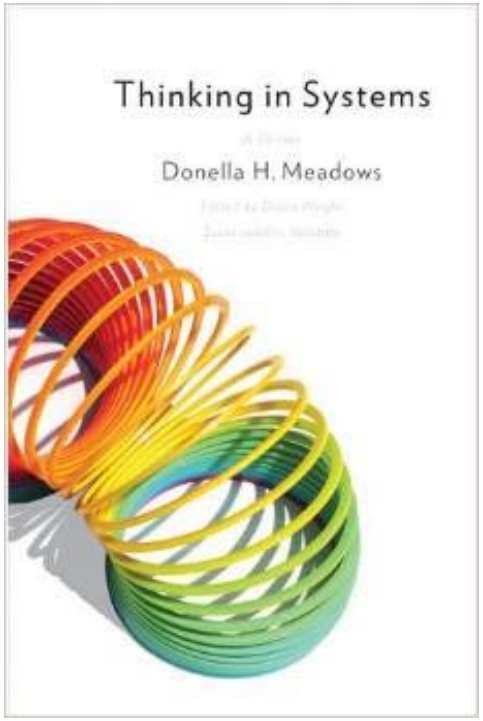
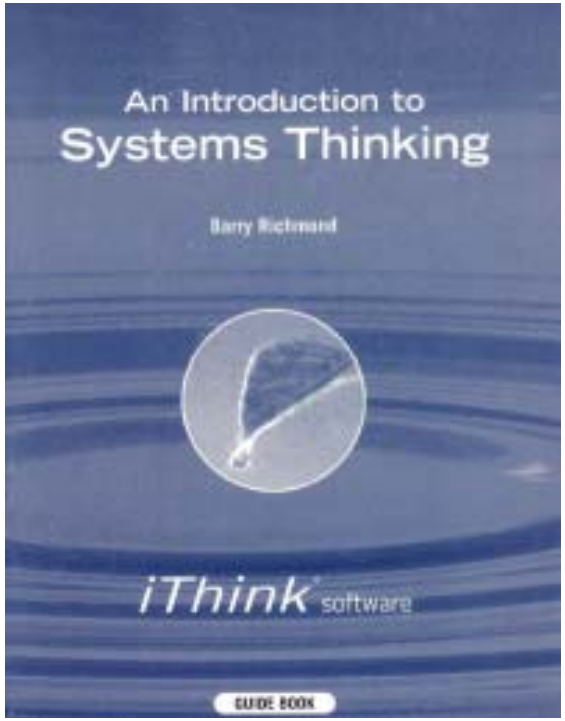
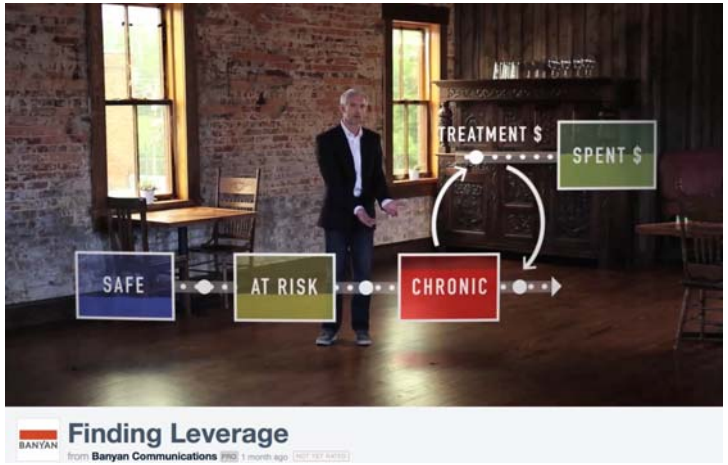
# Systems Thinking Resources




*Thinking in Systems: A Primer*
Author: Donella Meadows
Publisher: Chelsea Green Publishing Company (2008)




*An Introduction to Systems Thinking with iThink*
Author: Barry Richmond
Publisher: isee systems




*Finding Leverage*
Chris Soderquist
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Chris Soderquist
Pontifex Consulting

PO Box 64
Hanover, NH 03755
(603) 276-0203
chris@findinghighleverage.com
findinghighleverage.com

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