

**Getting to Maybe:
Evaluation,
Systems Thinking,
and
Complexity Science**

Tampa
February 25, 2008

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Evaluation History

Setting the Context:
Context Matters

So, In the beginning...

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EVALUATION HITS POPULAR CULTURE

"When I grow up, I want to be"...



**Utilization-Focused
Evaluation,
4th edition, May, 2008**

- 1st edition, 1978
- 2nd edition, 1986
- 3rd edition, 1997

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New Direction # 1

**International and cross-cultural expansion of evaluation:
globalization and diversity**

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New Direction # 2

From Studies to Streams

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Evaluation Trends: 20 years ago

- One study for one user
- Modest databases
- Long time frames for studies
- Presumption of direct use
- Long reports
- Generally single method
- Dissemination was the written word

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10 years ago

- One study for multiple users.
The age of stakeholders
- Larger databases with computer support
- More client focus
- Not just decision use, but also conceptual use
- Multiple teams producing information
- Quantitative/qualitative wars come to an end:
valuing multiple methods

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And now...

- We are moving from
discrete studies to
information streams
- Systems not individual evaluators produce evaluative knowledge
- Evaluative streams are multiple – integrating information from different sources

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And now...

- Data collection & reporting at multiple levels by multiple-stakeholders
- Databases are continuous and virtual
- Time frames are immediate
- Analysis is continuous
- Virtual analysis of trends and conditions
- Visual displays instead of narratives

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And now

- Partnerships are dominant in collecting, analyzing and sharing evaluative knowledge
- Internet is the new information glue
- Increased transparency of evaluative knowledge
- Emphasis on continuous organizational adaptation and improvement

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New Direction # 3

Proliferation of evaluation models, theories, options, and methods, and approaches

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Original Primary Options

Formative
and
Summative
Evaluation

(Mid-term and End-of-Project Reviews)

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**Blandin Community
Leadership Program**

**Developmental
Evaluation**

Evidence-based Practice

Evaluation grew up in the “projects” testing models under a theory of change that pilot testing would lead to proven models that could be disseminated and taken to scale:

The search for *best practices*
and *evidenced-based practices*

**Fundamental Issue:
How the World Is Changed**

**Top-down dissemination of
“proven models”**

versus

Bottoms-up adaptive management

**Conditions that challenge
evaluation**

- High innovation
- Development
- High uncertainty
- Dynamic
- Emergent
- Systems change

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Challenge:

**Matching the evaluation
process and design to the
nature of the situation:**

**Contingency-based
Evaluation**

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New Direction # 4

**Broader understanding
and
conceptualization of
*evaluation use***

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Conceptualizing Use

- **Utilization-focused evaluation now includes knowledge management, organizational learning, and facilitating change. The focus is as much on institutional uses of knowledge as on individual users**

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Re-conceptualizing Use

- **Use is a process not a event**
- **Use involves an interaction not just a report**
- **Use involves training for use not just delivery of results**
- **Use begins at the beginning not at the end**

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New Direction # 5

***Increased up-front role for
evaluation & evaluators
in intervention design:
Logic modeling &
Theory of change work***

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Some premises:

- **Evaluation is part of initial program design, including conceptualizing the theory of change**
- **Evaluator's role is to help users clarify their purpose, hoped-for results, and change model.**
- **Evaluators can/should offer conceptual and methodological options.**
- **Evaluators can help by questioning assumptions.**
- **Evaluators can play a key role in facilitating evaluative thinking all along the way..**
- **Designs can be emergent and flexible.**

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New Direction # 6

***Beyond linear logic models:

Systems Thinking
and
Complexity Science***

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Three ways of conceptualizing and mapping theories of change

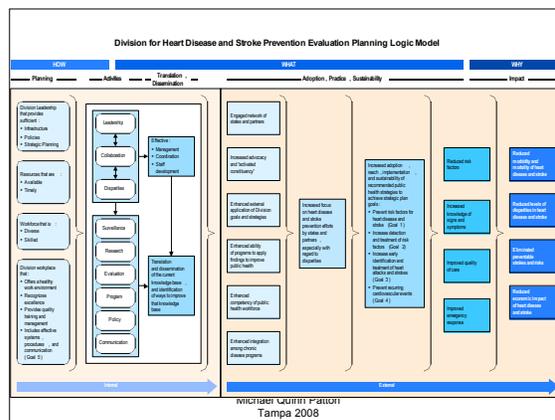
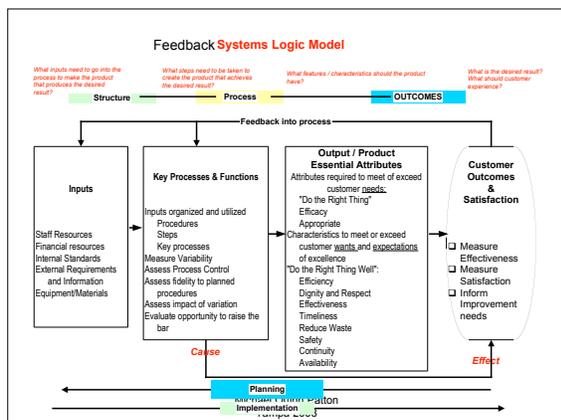
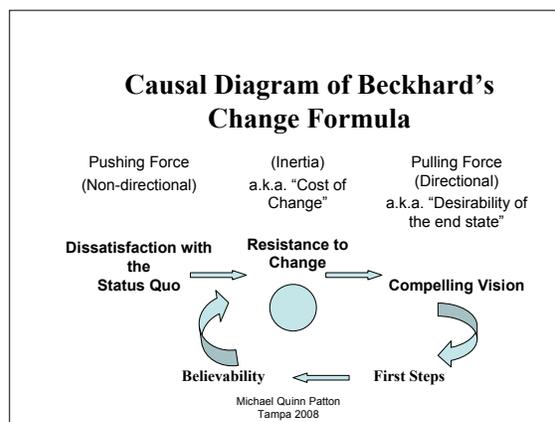
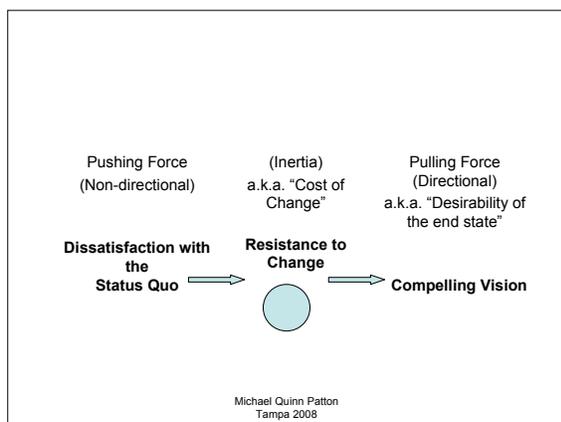
- ❖ **Linear Newtonian causality**
- ❖ **Interdependent systems relationships**
- ❖ **Complex nonlinear dynamics**

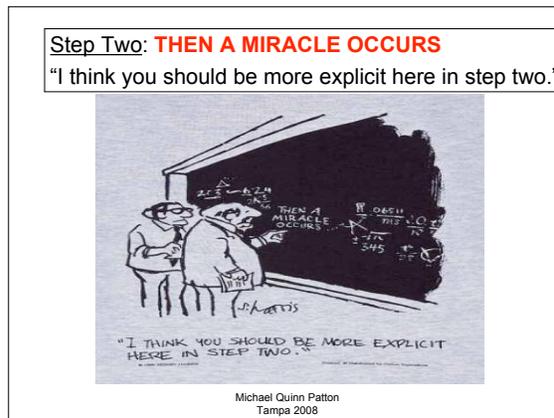
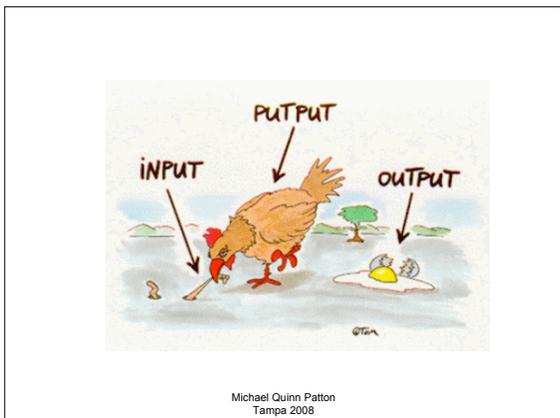
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Linear Logic Model

INPUTS (people, materials) →
ACTIVITIES (processes) →
OUTPUTS →
OUTCOMES →
CHANGES IN PEOPLES LIVES →
IMPACTS →
CHANGES IN COMMUNITIES

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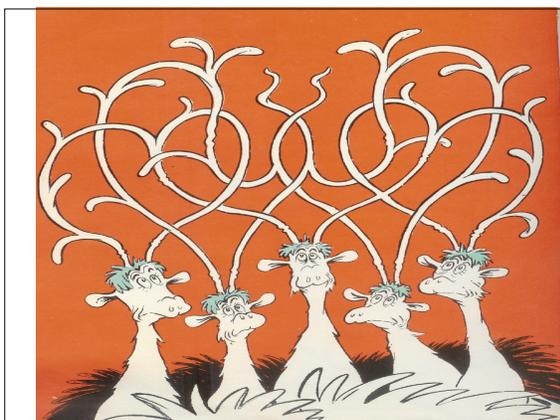
Systems

- **Parts are interdependent such that a change in one part changes all parts**
- **The whole is greater than the sum of the parts**
- **Focus on interconnected relationships**
- **Systems are made up of sub-systems and function within larger systems**

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Systems Concepts in Evaluation – An Expert Anthology. 2006. Bob Williams and Iraj Imam AEA Monograph, EdgePress/AEA Point Reyes CA.

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Understanding the Elephant from a Systems Perspective

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The relationship between what goes in and what comes out



What conceptual framework informs front-end evaluation work?

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Teen Pregnancy Program Example

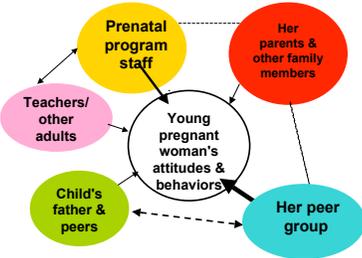
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Logic Model for Pregnant Teens Program

1. Program reaches out to pregnant teens
2. Pregnant teens enter and attend the program (participation)
3. Teens learn prenatal nutrition and self-care (increased knowledge)
4. Teens develop commitment to take care of themselves and their babies (attitude change)
5. Teens adopt healthy behaviors: no smoking, no drinking, attend prenatal clinic, eat properly (behavior change)
6. Teens have healthy babies (desired outcome)

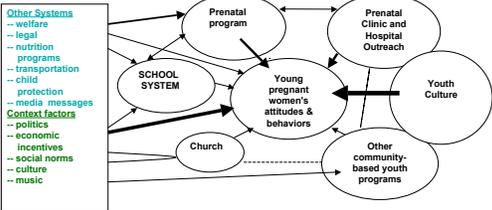
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Systems web showing possible influence linkages to a pregnant teenager



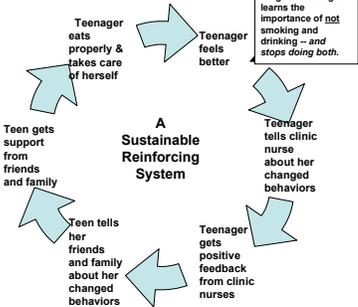
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Program systems web showing possible institutional influences affecting pregnant teenagers:

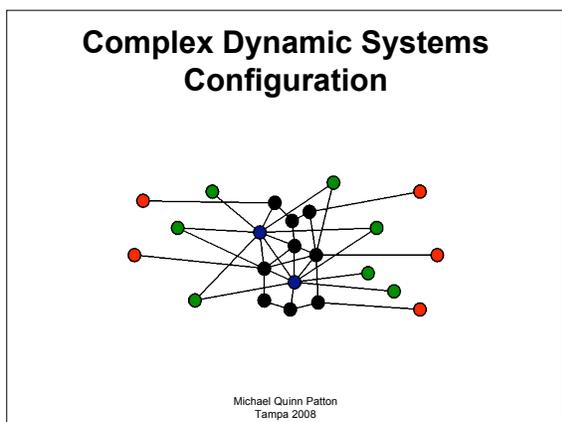
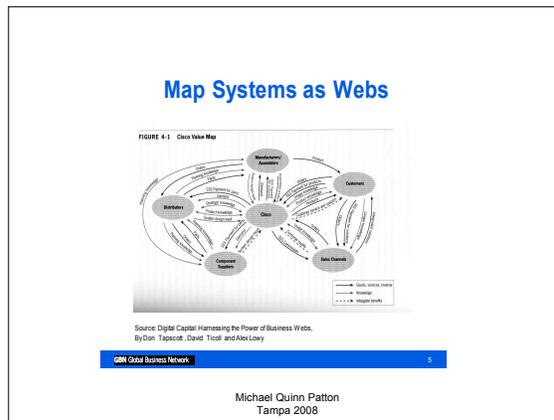
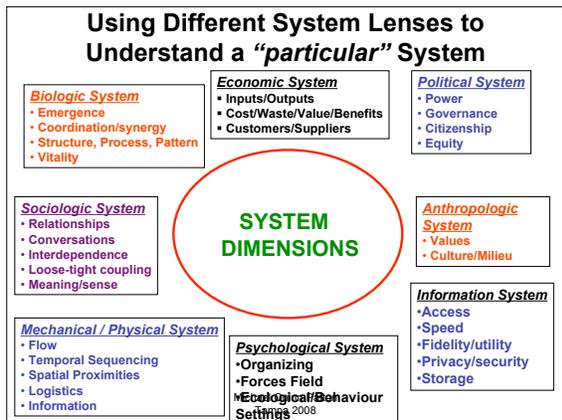


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Sustainable change: Systems dynamic reinforcing feedback loops



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- ### HIV/AIDS Example
- Hits every system: health, family, social, religious, economic, political, community, international
 - Requires multiple interventions on multiple fronts in all subsystems simultaneously
 - Resulting reactions, interactions, consequences dynamic, unpredictable, emergent, and ever changing
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Some system premises

Systems neutrality:
An observed system is functioning as observed for some reasons, fulfilling some functions.
In whose interests is a system functioning? Who benefits?

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Healthy system
In a well-functioning system, no subsystem is operating at its maximum.

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Systems change

**During transitions
from one system to
another, things will get
worse before they get
better.**

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Systems Dynamics

**Dynamic system
interrelationships increase the
likelihood of unintended
consequences as systems
change. Expect the
unexpected.**

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Challenges: **Situation Recognition and Appropriate Evaluation Designs**

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The nature of
EXPERTISE:
**Situation
Recognition**

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Contingency-based Evaluation

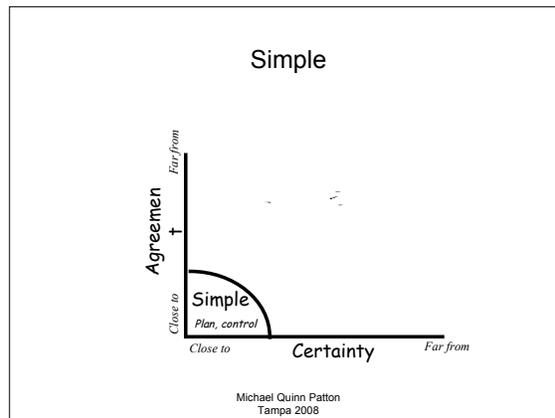
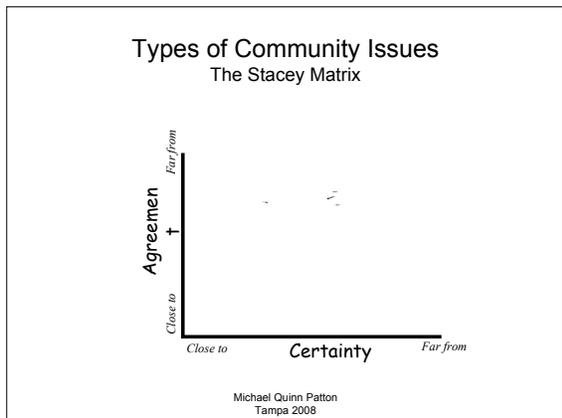
- Situational analysis & responsiveness
- Context sensitivity
- Clarify and focus on intended users:
stakeholder analysis
- Clarify and focus on intended uses
- Methodological appropriateness
- Criteria for evaluating the evaluation:
credibility, meaningfulness

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Conceptual Options

- **Simple**
- **Complicated**
- **Complex**

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Simple

Following a Recipe

The recipe is essential

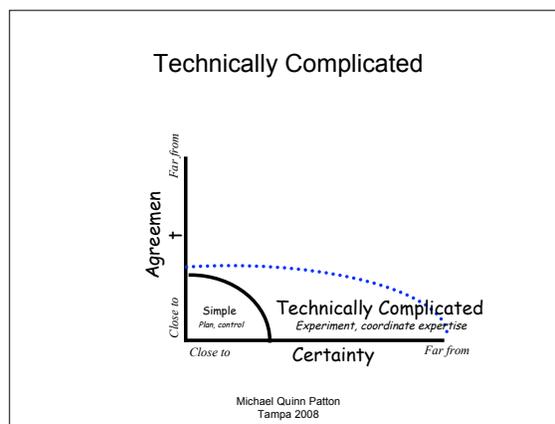
Recipes are tested to assure replicability of later efforts

No particular expertise; knowing how to cook increases success

Recipes produce standard products

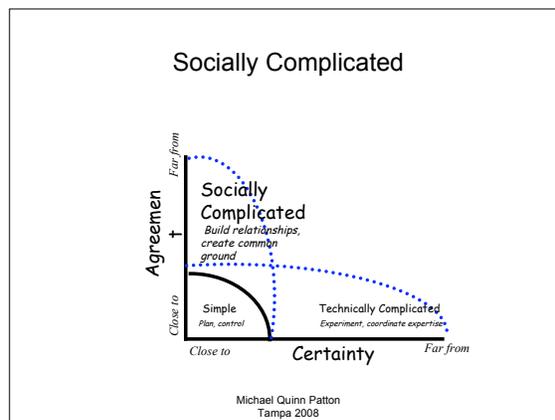
Certainty of same results every time

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<h3>Simple</h3> <p>Following a Recipe</p> <ul style="list-style-type: none"> The recipe is essential Recipes are tested to assure replicability of later efforts No particular expertise; knowing how to cook increases success Recipes produce standard products Certainty of same results every time 	<h3>Complicated</h3> <p>A Rocket to the Moon</p> <ul style="list-style-type: none"> Formulae are critical and necessary Sending one rocket increases assurance that next will be ok High level of expertise in many specialized fields + coordination Rockets similar in critical ways High degree of certainty of outcome 	<h3>Complex</h3> <p>Raising a Child</p>
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Socially complicated

Implementing human rights agreements, like gender equity or outlawing child labor

Environmental Initiatives

- ❖ Many different and competing stakeholders
- ❖ Diverse vested interests
- ❖ High stakes

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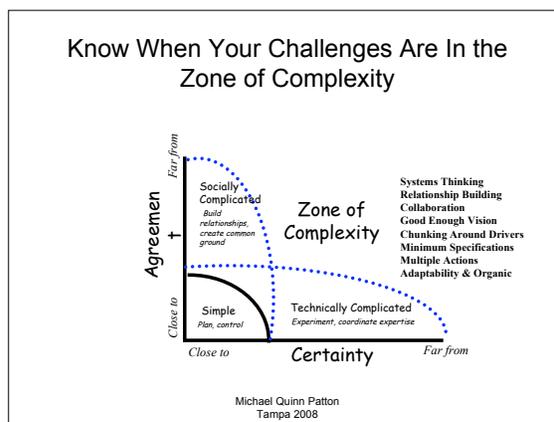
Socially complicated situations pose the challenge of coordinating and integrating many players

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Stakeholder Mapping

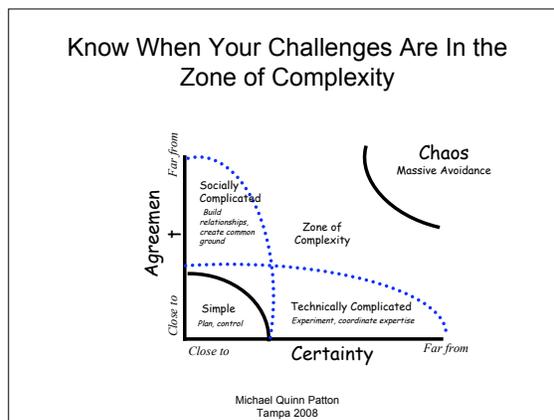
High Interest/ Low Power THE INVOLVED	High Interest/ High Power THE PLAYERS
THE CROWD Low interest/ Low Power	CONTEXT SETTERS Low Interest/ High Power

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<p>Simple Following a Recipe</p> <ul style="list-style-type: none"> ■ The recipe is essential ■ Recipes are tested to assure replicability of later efforts ■ No particular expertise; knowing how to cook increases success ■ Recipes produce standard products ■ Certainty of same results every time 	<p>Complicated A Rocket to the Moon</p> <p style="font-size: small;">Sending one rocket increases assurance that will be completed</p> <p style="font-size: small;">Specialized expertise</p> <p style="font-size: small;">Similar in al ways</p> <p style="font-size: small;">Degree of certainty of outcome</p>	<p>Complex Raising a Child</p> <ul style="list-style-type: none"> • Formulae have only a limited application • Raising one child gives no assurance of success with the next • Expertise can help but is not sufficient; relationships are key • Every child is unique • Uncertainty of outcome remains
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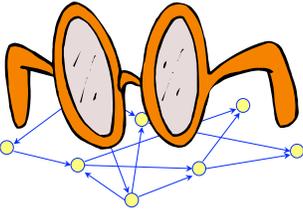
Simple	Complicate	Complex
Following a Recipe	A Rocket to the Moon	Raising a Child
<ul style="list-style-type: none"> • The recipe is essential • Recipes are tested to assure replicability of later efforts • No particular expertise; knowing how to cook increases success • Recipe notes the quantity and nature of "parts" needed • Recipes produce standard products • Certainty of same results every time 	<ul style="list-style-type: none"> • Formulae are critical and necessary • Sending one rocket increases assurance that next will be ok • High level of expertise in many specialized fields + coordination • Separate into parts and then coordinate • Rockets similar in critical ways • High degree of certainty of outcome 	<ul style="list-style-type: none"> • Formulae have only a limited application • Raising one child gives no assurance of success with the next • Expertise can help but is not sufficient; relationships are key • Can't separate parts from the whole • Every child is unique • Uncertainty of outcome remains

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The Frogtown Neighborhood Children's Community Initiative in Saint Paul, Minnesota

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Seeing Through A Complexity Lens



"You don't see something until you have the right metaphor to let you perceive it". Thomas Kuhn

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Complex Nonlinear Dynamics

- **Nonlinear:** Small actions can have large reactions. *"The Butterfly Wings Metaphor"*
- **Emergent:** Self-organizing, Attractors
- **Dynamic:** Interactions within, between, and among subsystems and parts within systems can be volatile, changing
- **Getting to Maybe:** Uncertainty, unpredictable, uncontrollable

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Major Sources of Uncertainty

- **Human irrationality:** Behavioral Economics
- **Different contexts**
- **Change in all its splendid manifestations**

New Direction # 7

Methodological Flexibility & Creativity
versus
Methodological Rigidity

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**The Debate About
Randomized Controls in
Evaluation:**

**The Gold Standard
Question**



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Design Tension

**Single Standard
Hierarchy**

VS

**Situational Variation and
Appropriateness**

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GOLD STANDARD:

**METHODOLOGICAL
APPROPRIATENESS**



not

**Methodological
orthodoxy or rigidity**

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Creative Design Thinking

David P. Billington:*

**“The goal of good design is to
integrate efficiency, economy
and elegance in a single design.”**

* August 18, 2007, NY Times, A13

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Photo by
Lynsey Gornick

“One Bridge Doesn’t Fit All”

**“As many have pointed out, the deadly
bridge failure in Minneapolis was
symptomatic of a system of bridges that
will continue to corrode, crack and crumble
if not maintained. But maintenance is not
the only problem. We also need to design
and build better bridges.”**

Metaphor for evaluation design

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“The Minneapolis collapse is hauntingly similar to the collapse in 1983 of another interstate highway bridge over the Mianus River in Connecticut. That disaster led to inspections of similar bridges, which found dangerous cracks from deferred maintenance....”

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What the Mianus and Minneapolis bridges had in common was not just neglect. Both were the products of **a design mentality in which engineers simply used a standard form**, and often the same detailed features. Public bridges are all too often designed by anonymous teams, and the results can be seen on our highways.

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Creative Challenge

Situational adaptability:

- **Contingency-based evaluation**
- **Appropriateness**
 - Using standard forms of evaluation
and
 - Going beyond standard forms when
appropriate and useful

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Standard Evaluation Forms

1. Inadequate upfront utilization focus
2. Program/project as the unit of analysis
3. Linear logic models
4. Focus on findings use vs whole process
5. Individual outcomes focus vs systems change
6. Preference for quantitative data & RCTs as the methodological Gold Standard
7. Static designs

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Getting to Maybe: How the World Is Changed? 2006

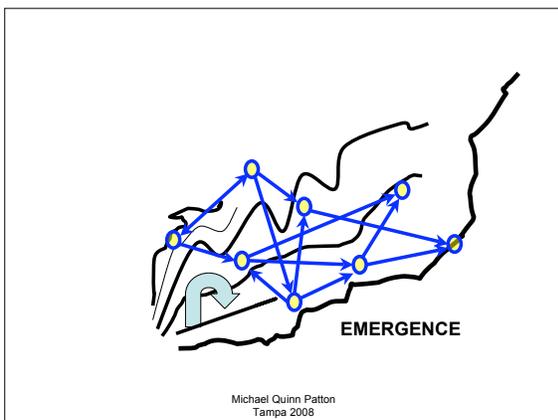
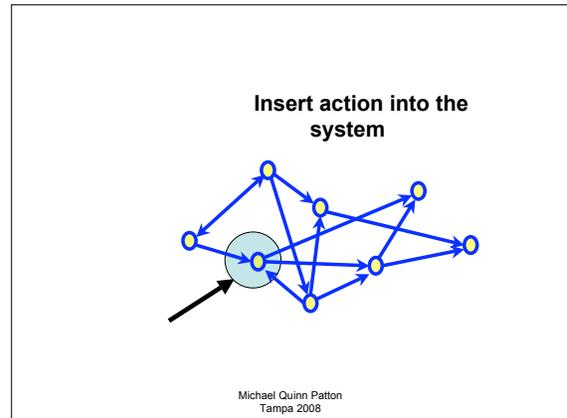
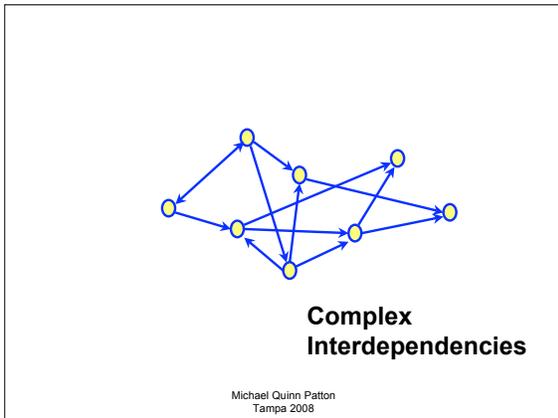
Frances Westley, Brenda
Zimmerman, Michael Q. Patton
Random House Canada,

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Complex Situations

- **Highly emergent (difficult to plan and predict)**
- **Highly dynamic, rapidly changing**
- **Relationships are non-linear & interdependent rather than simple (linear cause-effect)**

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**Contingency-based
Developmental
Evaluation**

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**Improvement
versus
Development**

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Beyond
just
Summative
and
Formative

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Beyond Static Accountability Models

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Example of an emergent option:

Developmental Evaluation

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DEVELOPMENTAL EVALUATION DEFINED

Evaluation processes, including asking evaluative questions and applying evaluation logic, to support program, product, staff and/or organizational **development**. The evaluator is part of a team whose members collaborate to conceptualize, design and test new approaches in a long-term, on-going process of continuous improvement, adaptation and intentional change. The evaluator's primary function in the team is to elucidate team discussions with evaluative questions, data and logic, and facilitate data-based decision-making in the developmental process.

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CONTRASTS

**Traditional
evaluations...
Testing models**

**Complexity-based,
Developmental
Evaluation...**

- Supporting innovation and adaptation

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**Traditional
Evaluation...**

- Render definitive judgments of success or failure

**Developmental
Evaluation...**

- Provide feedback, generate learnings, support direction or affirm changes in direction in real time

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**Traditional
Evaluation...**

- Measure success against predetermined goals

**Developmental
Evaluation...**

- Develop new measures and monitoring mechanisms as goals emerge & evolve

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Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Evaluator external, independent, objective	<ul style="list-style-type: none">• Evaluator part of a team, a facilitator and learning coach bringing evaluative thinking to the table, supportive of the organization's goals
<small>Michael Quinn Patton Tampa 2008</small>	

Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Evaluator determines the design based on the evaluator's perspective about what is important. The evaluator controls the evaluation.	<ul style="list-style-type: none">• Evaluator collaborates with those engaged in the change effort to design an evaluation process that matches philosophically and organizationally.
<small>Michael Quinn Patton Tampa 2008</small>	

Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Design the evaluation based on linear cause-effect logic models	<ul style="list-style-type: none">• Design the evaluation to capture system dynamics, interdependencies, and emergent interconnections
<small>Michael Quinn Patton Tampa 2008</small>	

Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Aim to produce generalizable findings across time & space	<ul style="list-style-type: none">• Aim to produce context-specific understandings that inform ongoing innovation
<small>Michael Quinn Patton Tampa 2008</small>	

Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Accountability focused on and directed to external authorities and funders.	<ul style="list-style-type: none">• Accountability centered on the innovators' deep sense of fundamental values and commitments – and learning.
<small>Michael Quinn Patton Tampa 2008</small>	

Traditional Evaluation...	Developmental Evaluation...
<ul style="list-style-type: none">• Accountability to control and locate blame for failures	<ul style="list-style-type: none">• Learning to respond to lack of control and stay in touch with what's unfolding• And thereby respond <i>strategically</i>
<small>Michael Quinn Patton Tampa 2008</small>	

<p>Traditional Evaluation...</p> <ul style="list-style-type: none">• Evaluation often a compliance function delegated down in the organization	<p>Developmental Evaluation...</p> <ul style="list-style-type: none">• Evaluation a leadership function: <i>Reality-testing, results-focused, learning-oriented leadership</i>
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<p>Traditional Evaluation...</p> <ul style="list-style-type: none">• Evaluation engenders <i>fear of failure.</i>	<p>Developmental Evaluation...</p> <ul style="list-style-type: none">• Evaluation supports <i>hunger for learning.</i>
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Conditions

- High innovation
- Development
- High uncertainty
- Dynamic
- Emergent
- Systems change

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SenseMaker software

- Dave Snowden, Founder of *Cognitive Edge*, former Director of Knowledge Management at IBM
- *SenseMaker* can code and map 95,000 stories in 24 hours
- See the world as others see it; anti-terror applications.
- See the quantitative patterns in the meta-data with qualitative context and meaning

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New Direction # 8

Infusing *evaluative thinking* as a primary type of evaluation process use.

Capacity-building as an evaluation focus.

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Thinking about:

The role can evaluation play with complex dynamic innovations....

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And the beat goes on...

Evaluation as an
ever-evolving field

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December 2007

References

- *Getting to Maybe: How the World Is Changed?* Frances Westley, Brenda Zimmerman, Michael Q. Patton
Random House Canada, 2006.
- *Utilization-Focused Evaluation*, 4th ed.,
Michael Quinn Patton, Sage Publications,
2008

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