SYSTEMS THEORY as Organizational Thinking

Provides a general analytical framework (perspective) for viewing an organization.

“None are so blind as those who have sight and cannot see”

- Helen Keller

What is a system?

A system is a group of interacting, interrelated, and interdependent elements forming a complex whole.

Systems Theory – Key Constructs

- Synergy (1 + 1 = 3)
- Interdependence (depend on each other)
- Interconnections
  - within the organization
  - between the organization and the environment
- Organization as ORGANISM
- “A set of elements standing in inter-relations”
- Each piece has impact on another and, in turn, is affected by other pieces

Principles of General Systems Theory

- **Open-Systems Theory Principles**
  - Parts that make up the system are interrelated.
  - Health of overall system is contingent on subsystem functioning.
  - Open systems import and export material from and to the environment (Permeability).
  - Relative openness (system can regulate permeability)
  - (ENTROPY) Concepts
    - **Entropy (measurement of disorder) is that nature tends to take things from order to disorder in isolated systems.**
    - **Negentropy - information processes negate the effects of entropy by producing order from chaos.**

Systems Thinking – "No Feedback – No System"

Feed-forward **defines a system which "reacts to changes in its environment," usually to maintain some desired state of the system (equilibrium).**
Quite Predictive – The system responds to a measured disturbance in a pre-defined way.

Example: If A happens, we do B

In contrast, ***Feedback systems*** **use a process of sharing observations, concerns and suggestions between persons or divisions with an intention of** ***improving*** **both personal and organizational performance.**

Example: If A happens, we must develop the best response, then react

All Feedback is either:

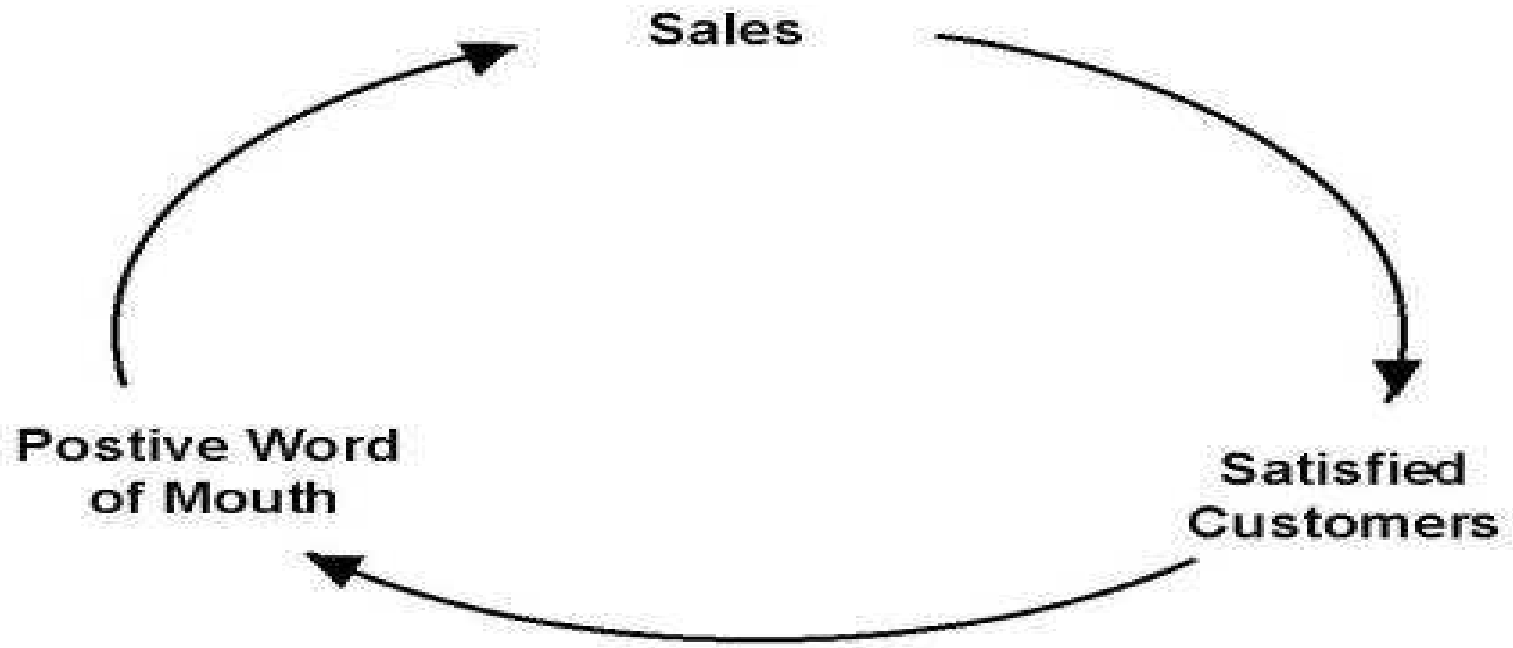
Reinforcing Feedback

Effect of an action, change, or decision returned **to amplify or bolster what caused it**.
It drives a system increasingly faster in the direction it is already going

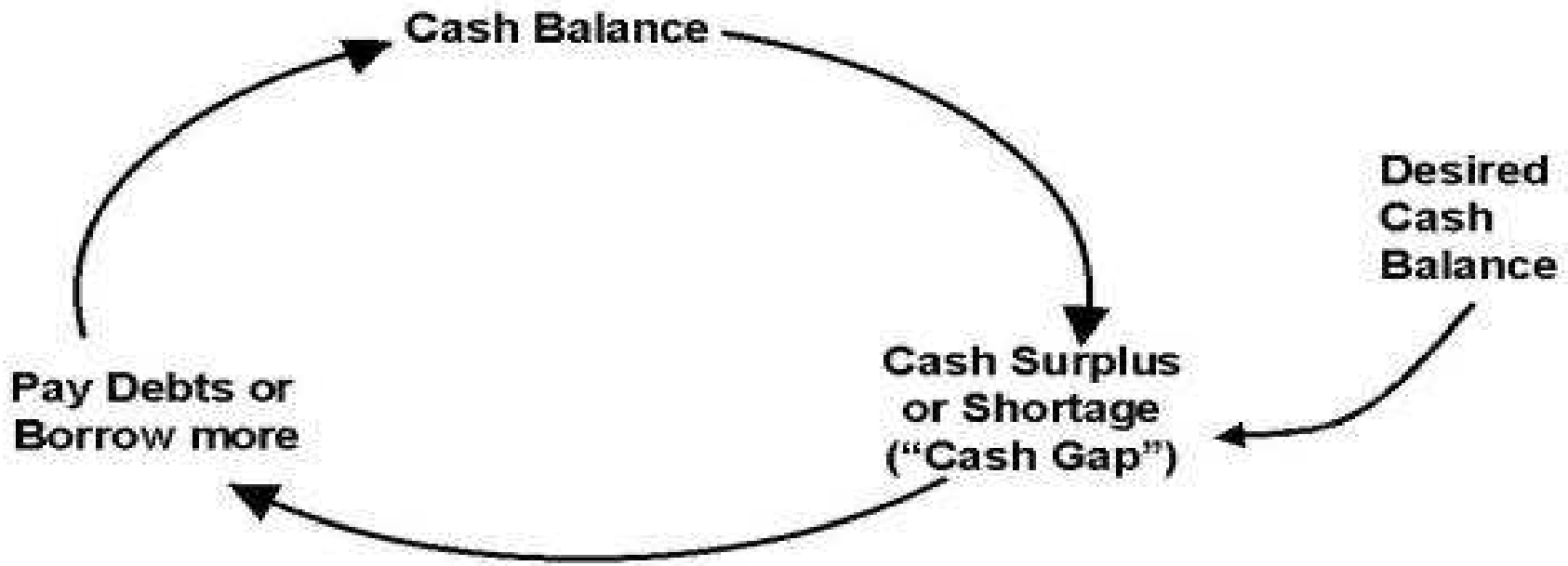
Balancing Feedback

Effect of an action returned (fed back) **to oppose the very action that caused it**. Balancing-feedback has a **correcting or stabilizing effect on the system**

Reinforcing Feedback



Balancing Feedback



Mental models

- **Mental models** are defined as our *beliefs* about the systems of causes and effects in the world.

  These include our assumptions, attitudes, values, and our understanding of how we think the world works.

Another Mental Model – Naomi Campbell

“Thinking in Circles”

… Rather Than Straight Lines

Learning how to solve problems better

Argyris and Schön (1974) initially looked to three elements:

Governing variables: **those dimensions that people are trying to keep within acceptable limits.**

Action strategies: **the moves and plans used by people to keep their governing values within the acceptable range.**

Consequences: **what happens as a result of an action. These can be both intended and unintended**

There may be a mismatch between intention and outcome. In other words, the consequences may be unintended.

… Then they discussed:

Single-loop learning is present when goals, values, frameworks and, to a significant extent, **strategies are taken for granted.**

1. The emphasis is on 'techniques and making them more efficient'
2. Any reflection is directed toward making the strategy more effective.
3. This involves following routines and some sort of preset plan
4. Seen as adapting or coping learning

Double-loop learning, in contrast, '**involves questioning the role of the learning systems** which underlie actual goals and strategies.

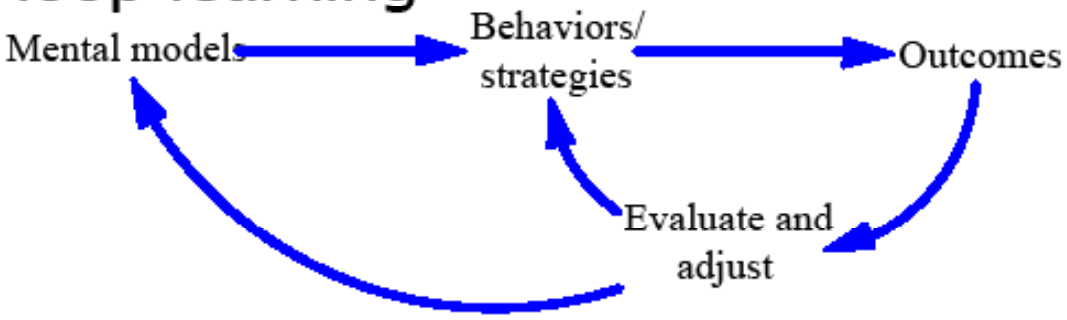
1. The organization questions policies, procedures, objectives, and norms.
2. This is more creative and reflexive, and involves consideration of the good.
3. Reflection here is more fundamental: the basic assumptions behind ideas or policies are confronted… hypotheses are publicly tested
4. Making sense of the environment

Add **Deutero-learning**: **Being aware of ignorance motivates learning.** Single and double loop learning will not take place if there is no awareness that learning must occur.

Double-loop learning is needed to develop effective strategies

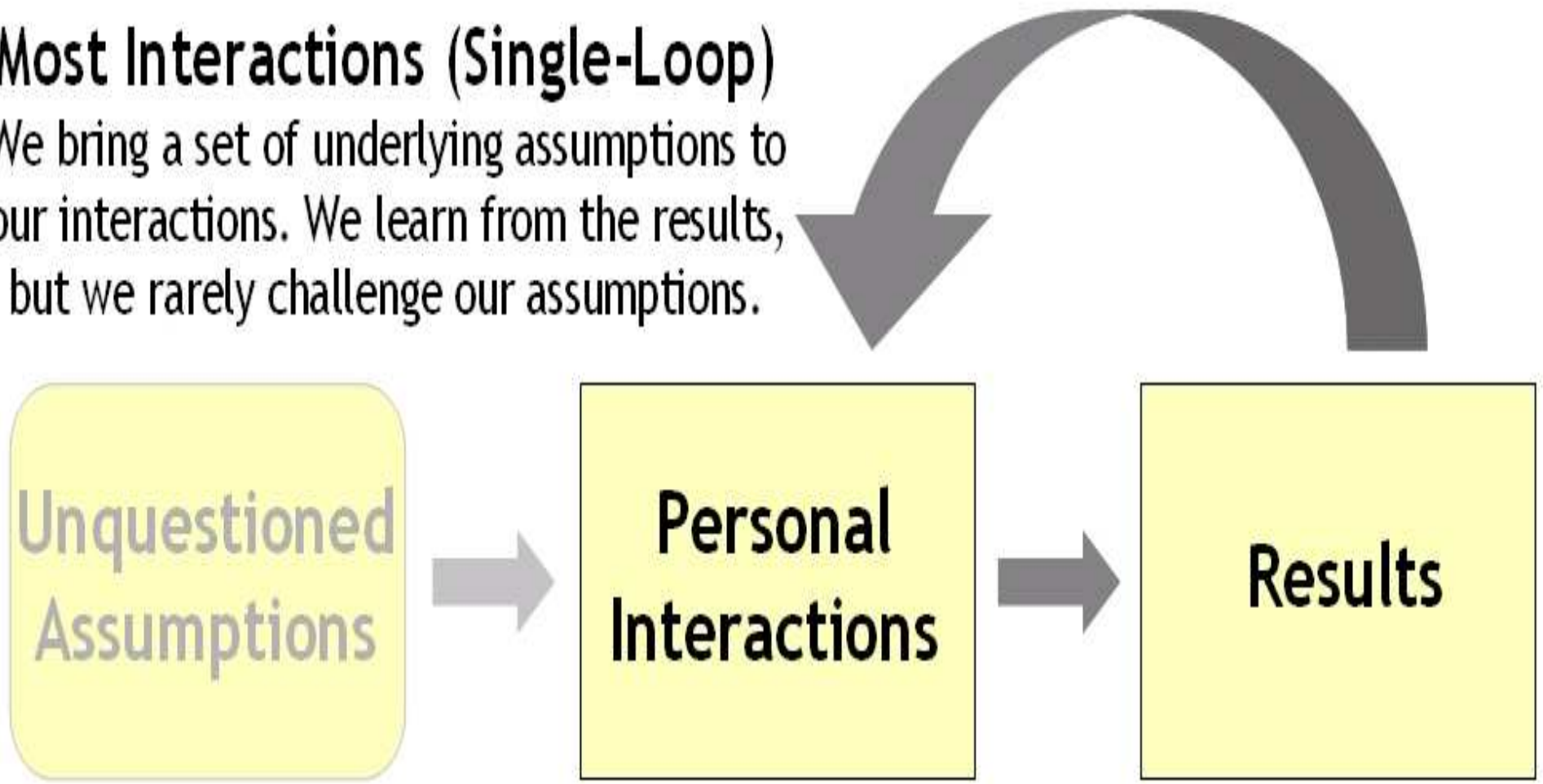
Single loop learning

Double loop learning



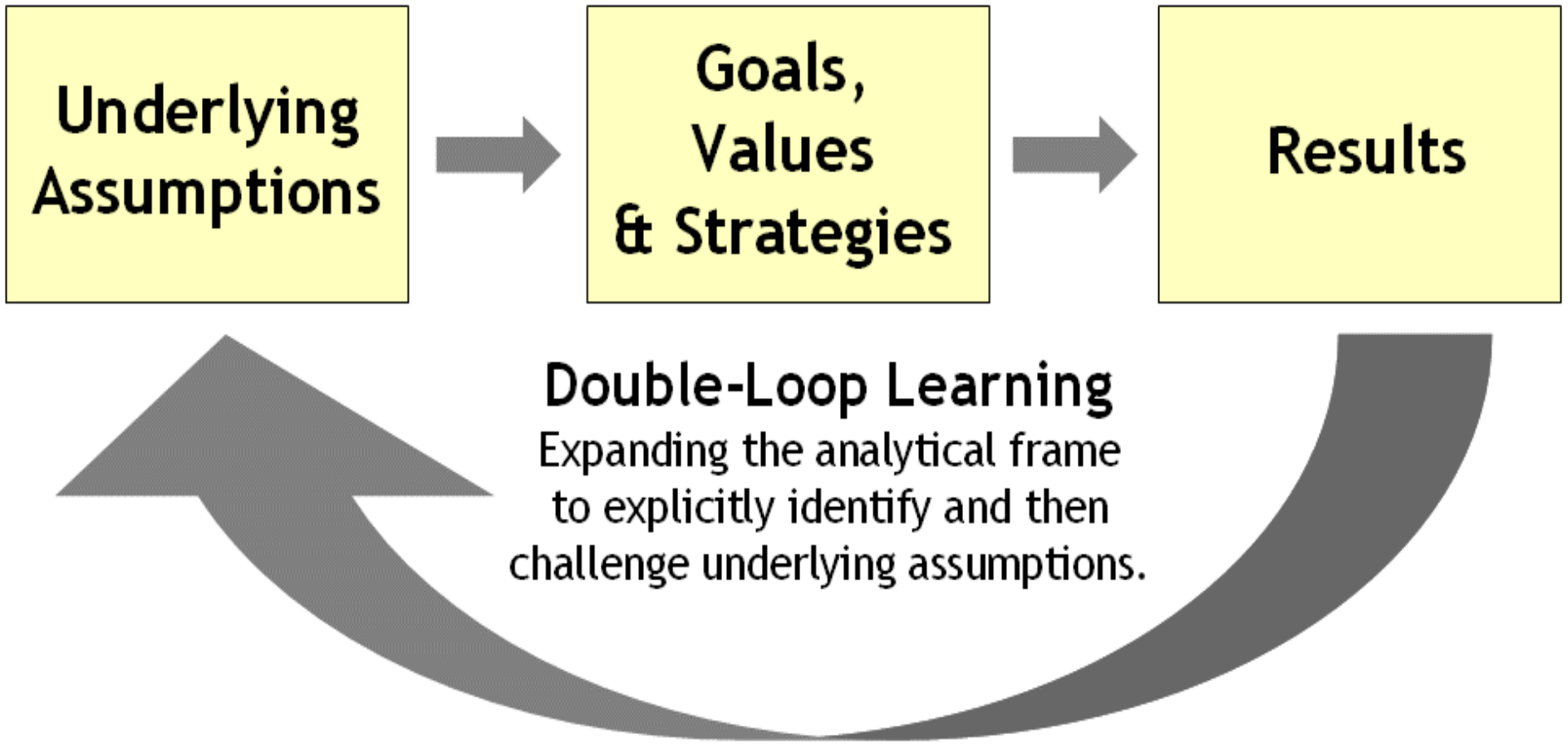
Most Interactions (Single-Loop)

We bring a set of underlying assumptions to our interactions. We learn from the results, but we rarely challenge our assumptions.

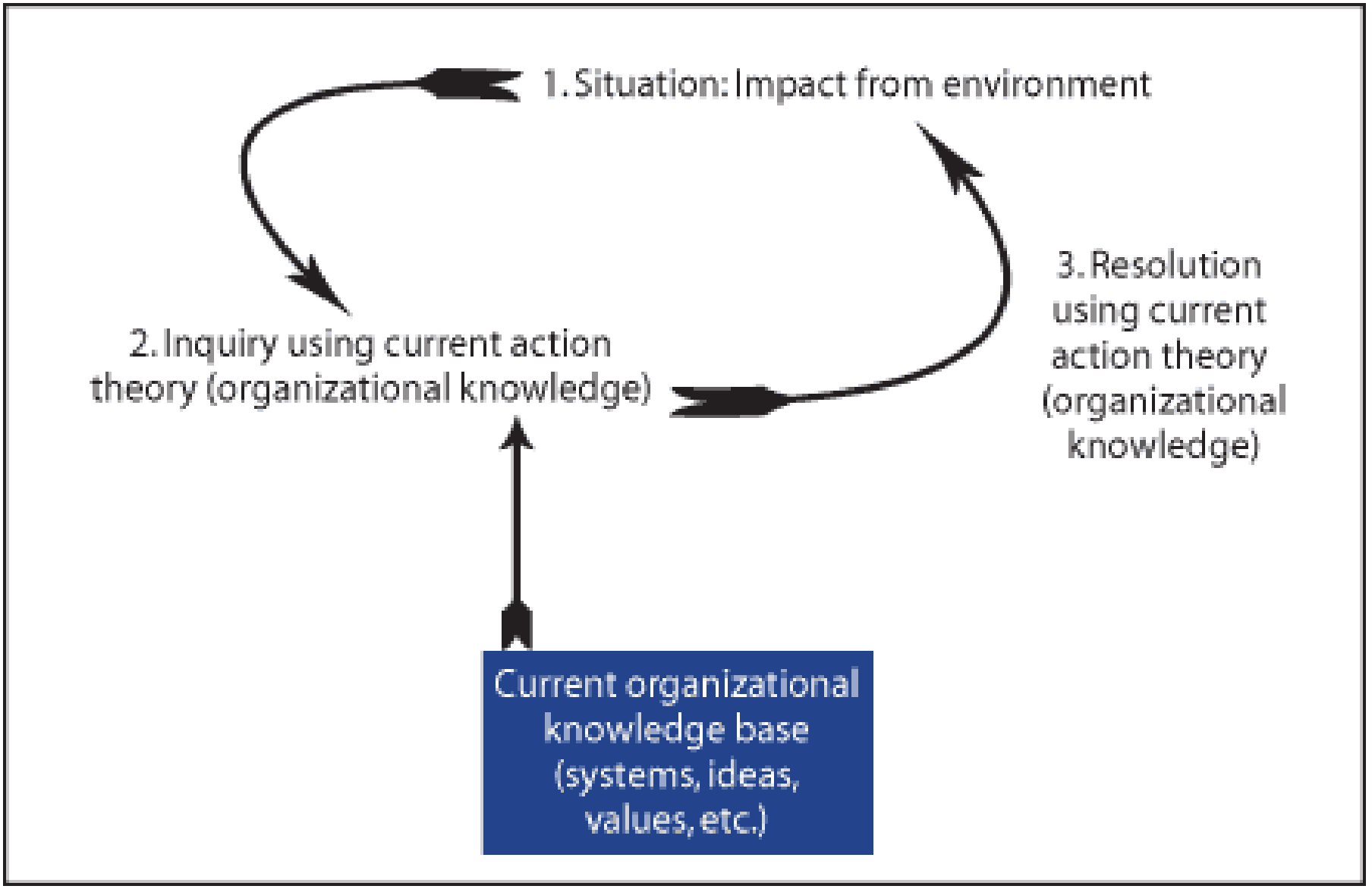


Most Learning (Single-Loop)

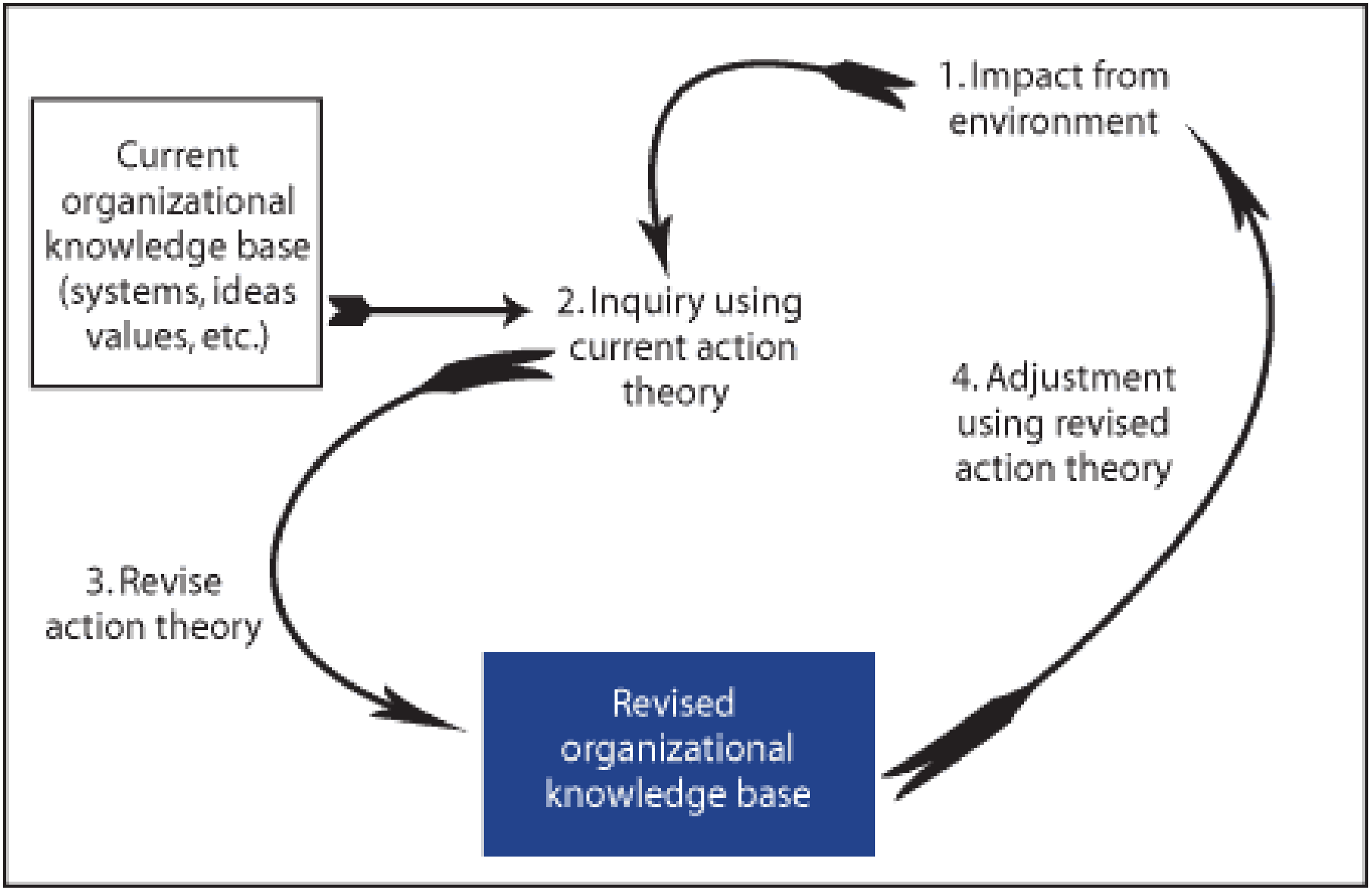
Improvement within an existing system that rests on unchallenged assumptions that are implicit and unchallenged.



Single Loop Continued



Double Loop Continued



Model I and Model II thinking

***Model I characteristics The governing Values of Model I are*:**

- **Win, do not lose**
- **Suppress negative feelings**
- **Emphasize rationality**

***Primary Strategies are*:**

- **Control environment and task unilaterally (one or the other)**
- **Protect self and others unilaterally**

***Usually operationalized by*:**

- **Advocating courses of action which discourage inquiry e.g.. "Lets not talk about the past, that's over."**
- **Treating ones' own views as obviously correct**
- **Making covert attributions and evaluations**
- **Face-saving moves - leaving potentially embarrassing facts unstated**

***Consequences include*:**

- **Defensive relationships**
- **Low freedom of choice**
- **Reduced production of valid information**
- **Little public testing of ideas**

Model II characteristics ***The governing values of Model II include:***

•Valid information
•Free and informed choice
•Internal commitment

Strategies include:

•Sharing control
•Participation in design and implementation of action

Operationalized by:

•Attribution and evaluation illustrated with relatively directly observable data
•Surfacing conflicting views
•Encouraging public testing of evaluations

Consequences should include:

•Minimally defensive relationships
•High freedom of choice
•Increased likelihood of double-loop learning

Systems Thinking Strengths

- Recognizes . . .
  - interdependence of personnel
  - impact of environment on organizational structure and function
  - affect of outside stakeholders on the organization
- Focuses on environment and how changes can impact the organization
- Seeks to explain “synergy” & “interdependence”
- Broadens the theoretical lens for viewing organizational behavior.

Systems thinkers approach quality performance as a holistic enterprise:

- **Quality, productivity, and profit work together to guarantee the success of the organization.**

- **In essence: The right hand knows what the left is doing and coordinates its efforts and functions with it**

- **An organization must manage its components**

- **But more importantly it must manage the interactions between the components to mange the entire system**

Implications

- If we all work within systems, that implies that we **cannot independently affect the whole system**
- We *can* **affect other components** of the system
- If we want to change the system, we need to team with other people in the system
- This has implications for performance appraisals, goals, and how we approach our daily work

Key Points

The key points of systems thinking are:

- More attention to interactions than components.
- More knowledge of statistical variation than of discreet numbers.
- More long-term than short-term focus.
- More cooperation than fear, blame and internal competition.

This integrated theory of managing for improvement allows individuals working within a system to achieve far more than the individuals themselves could have achieved. Long-term success and a winning environment for all will come with systems thinking practice.

Bottom Line

The same misunderstandings and problems that continue to occur will eventually cause fatal damage to the system.