

# Systems Thinking and Fundamental Sources of Conflict

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## Introduction

It's important to be aware of fundamental sources of disagreement that can block group progress. These sources range among personal, technical, social/cultural and philosophical issues. Though philosophy may not seem practical, even the technical/systems issues are rooted in a way of seeing the world ... in philosophy. Philosophy matters. After considering these, and clearly this is by no means a complete list, one might wonder how it is that we ever agree on anything ... perhaps in many cases we don't agree, we just don't communicate clearly enough and with sufficient depth to realize it.

## Conflict Behavior

**Balance conflict.** The issue about conflict is not to avoid it ... and it's not necessarily to "manage" it by reducing it. The need is to maintain a balance between too little conflict and too much conflict ... and then to use the energy of conflict to achieve group goals. Figure 1 shows that decision quality is less than optimum when conflict is too low or too high. At the low limit we have "groupthink" where no different views are considered and at the high limit we have continuous conflict where common ground is never identified. We need some conflict, just not too much.

**Minimize personalized conflict.** It's important to distinguish between substantive and personalized conflict. Personalized conflict is not helpful and will deteriorate group decision quality. "One specific personality characteristic which may easily give rise to interpersonal conflict in a group process is self-orientated, individualistic behaviour. Self-orientated need behaviour is mainly focused on the satisfaction of the need itself, regardless of the fact whether it helps the attainment of the group goal."<sup>1</sup> An effective group process will stick to the issues and reduce interpersonal conflict.

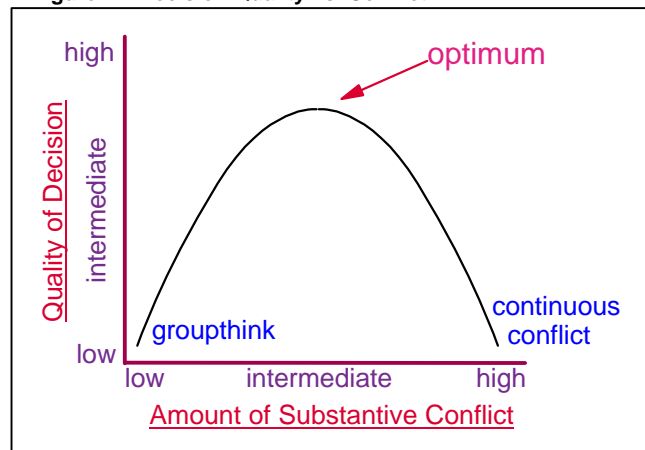
Be alert to sources of fundamental conflict. Different experiences and worldviews can be a source of conflict.

**Promote collaboration.** Figure 2 shows the behavior that is appropriate at different levels of assertiveness and cooperativeness.

Conflict behavior is situational:

- Accommodation occurs when individuals give in to others in order to maintain the relationship. They believe they cannot both meet their own needs and maintain the relationship. Move to accommodation when the relationship is more important than the issue.
- Conflict avoidance occurs when individuals do not want to have anything to do with conflict. They give up their individual needs and give up on improving the relationship. It also occurs when the issue is trivial.
- Competition occurs when winning is everything. Individuals achieve their goals at any cost ... with little regard for the relationship. Individuals move to competition when others take advantage of non-competitive behavior.
- Collaboration occurs when people merge insights from different perspectives and find creative solutions to meet both individual needs and relationship needs.

Figure 1. Decision Quality vs. Conflict



<sup>1</sup> Jac Vennix, *Group Model Building*, John Wiley and Sons, Ltd., 1996, p. 152 - 157.

- Compromise is based on the idea of everyone giving up something to balance meeting both individual and relationship needs. This approach is often used for settlement of a complex issue, however it often results in only temporary settlement.
- Co-opetition balances cooperation and competition with high assertiveness; this is when, if one individual does better, the other does better. In such a case the individuals are complementors.<sup>2</sup>

Competition works well in situations that are simple, easy or routine and not so well in situations which are complex, difficult or non-routine. In situations of substantive or cognitive conflict, cooperative environments generally produce better decisions than competitive environments. It “is not cognitive conflict which is the obstacle, but rather the competitiveness of the situation.”<sup>1</sup>

**Process must promote assertiveness and cooperation.**

Because groups face their greatest challenge addressing situations that are complex and difficult, they must use a decision-making process that allows individuals to be both assertive and cooperative. The process must enable assertiveness by allowing those with strong opinions to express them. It must enable cooperation by providing opportunities to promote mutual understanding; this is achieved in this process through inquiry into what others mean by what they say. Also necessary for cooperation is that the decision-making process be perceived to be fair in that it impartially takes into account all views; this is achieved in this process through proportional voting to gauge group consensus. Group process can provide for the exchange of substantive information, reduce competitive behavior and promote cooperation.<sup>3</sup>

Process isn’t enough. There are fundamental, deeply rooted sources of conflict that cannot be resolved by process alone. Many of these sources are so deeply rooted we are not consciously aware of them. There’s a cartoon that shows a person standing next to fish in a fishbowl. The fish says, “Water? What water?” The person is saying, “Culture? What culture?” Below are some of the sources of these deeply held mental models.

**Mental Models**

We make decisions not just on the basis of the data and information at hand (single-loop learning), but also on our mental models which filter the data and information according to our own personal point of view. It’s common for different people to have different mental models that lead them to filter the same data and information in ways that produce conflicting opinions about what to do. This is double loop learning. Examining mental models can lead to understanding and agreement.

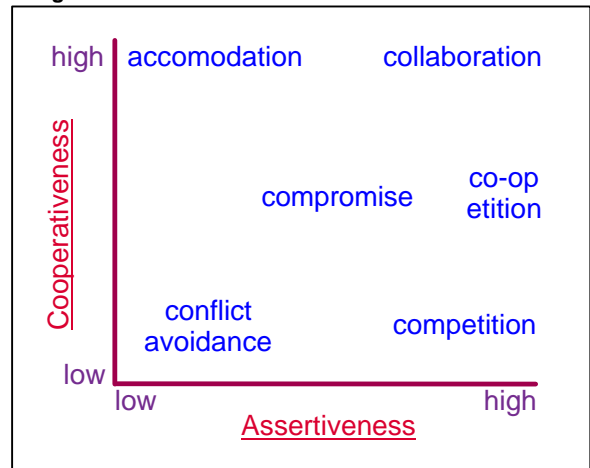
There are clues as to when we need to examine mental models. When

- people don’t understand each other’s positions.
- there’s significant emotion.
- there’s frustration.
- there’s conflict.
- there’s instant judgment about a statement:
  - disagreement (... "that's stupid!" ...)
  - agreement (.... "absolutely!" ....)

Ways to examine mental models:

- Reflection / Inquiry (... as in Dialogue ...)
- Ladder of Inference
- The Left-Hand Column

**Figure 2. Conflict Behavior**



<sup>2</sup> Brandenberger and Nalebuff, *Co-opetition*. New York, NY: Currency/Doubleday, 1996. Complementors are companies for which a critical interdependence between them makes both companies’ products more valuable. Examples are Oscar Mayer & Coleman’s, Intel & Microsoft, an auto company & an auto insurance company.

<sup>3</sup> “Facilitating Group Action”, Bob Powell, 2000 (unpublished).

- Balancing Inquiry and Advocacy
- Scenarios / Strategies (uncertainties / options)

## What are our experiences and interpretations?

We generally have different experiences and different ways of interpreting that experience. The “Ladder of Inference” (Figure 4) is a useful framework for inquiring into why another person has a different point of view. We can work down the ladder to find the source of the disagreement. As an example, even though observing the same situation, one person might have paid more attention to one aspect to the other.

It’s important to be aware that we generate “reality-creating” loops because of our beliefs and the actions we take based on them, as indicated by the “confirmation bias” and “self-fulfilling prophecy” loops in Figure 4. One person’s reality can literally be different from another’s based on these mechanisms.

## Do we create our reality?

The confirmation bias and self-fulfilling prophecy loops can lead to different people creating different realities from similar starting points. However, as shown in Figure 5, people have very different responses to the question, “What percentage of your reality do you create?” There’s an extremely wide range of opinion.

No matter the extent to which it’s actually true, such differences of opinion could lead to significant conflict. Beliefs about this could also affect a person’s actions. Those who do not believe their actions significantly influence reality will probably be less willing to invest their energy in improvement initiatives.

## What’s real and what’s not?

Figure 6 shows Ken Wilber’s dimensions of reality and its four quadrants. Examples:

- Top right: How a person’s brain works.
- Top left: What a person thinks and feels.
- Bottom right: How a society works.
- Bottom left: The experience of a society’s culture.

Figure 3. Single- and Double-Loop Learning

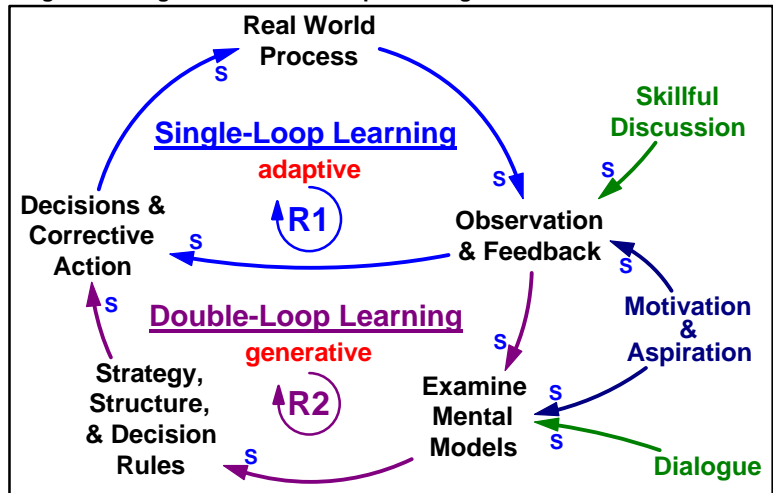


Figure 4. The Ladder of Inference

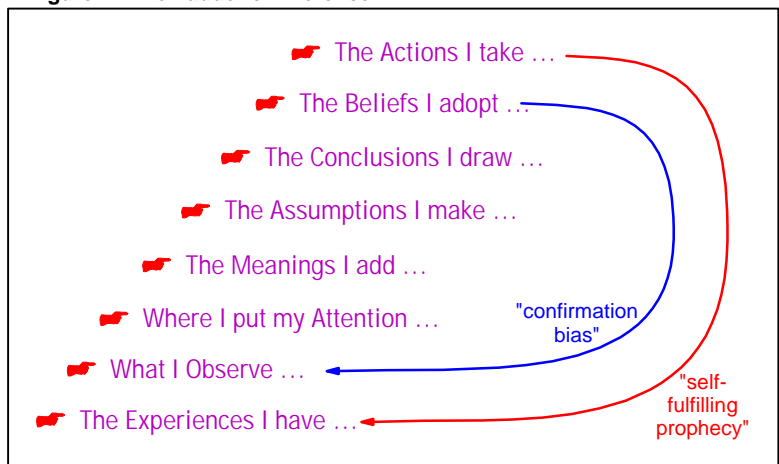
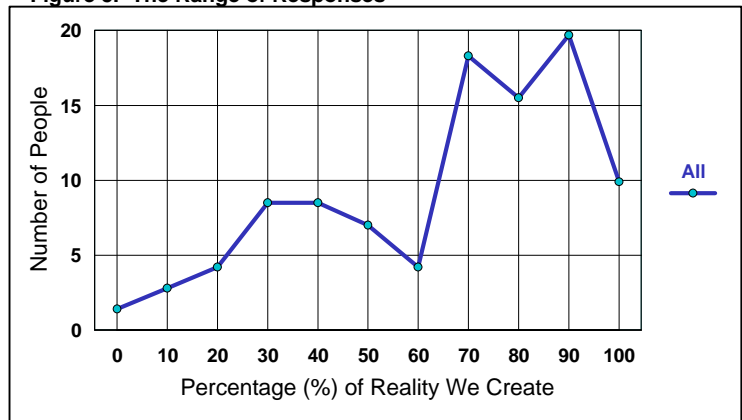


Figure 5. The Range of Responses



We can study a person's brain for a long time and we still won't know what's being thought and felt. We don't truly understand another society until we've experienced its culture.

What individuals think and feel, as well as cultural norms of behavior, influence what individuals do. Therefore, they are valid aspects of reality. Figure 7 illustrates Wilber's observation that our Western culture is polarized; we tend to focus primarily on the "Right Side." We tend to emphasize the "exterior," science, what can be measured. In doing so, we do not give appropriate consideration to much of what's real: esthetics and ethics. Altogether these different aspects of reality represent the Greek's Three Spheres: The Good, the True, and the Beautiful.

Conflict can occur when different people approach the same situation from a different "place" in reality. Figure 8 shows that, when we are oriented in different aspects of reality, we speak different languages: of feeling, of meaning and of power.<sup>4</sup> For example, when one person is talking about how he or she feels, it doesn't help when the other person gives advice about what should be done or what the situation means. When people approach a situation from such very different points of view, and don't recognize they are doing so, neither feels heard ... they really cannot communicate.

### Are we individuals or a collective?

Consider Wilber's vertical axis from collective to individual. Our culture is based on radical individualism; we tend to see ourselves primarily as individuals, rather than as members of a community. The truth is that we are neither purely individuals *nor* purely a collective. We are both. Balance is a difficult discipline;<sup>5</sup> it requires the systems thinking skill of seeing situations with both/and thinking, instead of either/or thinking.<sup>6</sup>

Systems principles indicate, however, that we must give real weight to the collective aspect of reality because systems have "emergent" properties ... properties that are not associated with any of the parts. An example of an emergent property is wetness. Neither hydrogen nor oxygen has this property, but in combination as H<sub>2</sub>O, water is wet. We can consider consciousness itself to be an emergent property ... examining individual neurons doesn't reveal consciousness.

The culture of a society is real ... culture has real impacts on our behavior in the world. Many mergers have failed because the cultures could not be successfully integrated. Organizations and groups must give balanced weight to individual and collective concerns, because optimizing the parts virtually guarantees that the whole will not be optimized.<sup>7</sup>

Figure 6. Ken Wilber's Quadrants of Reality

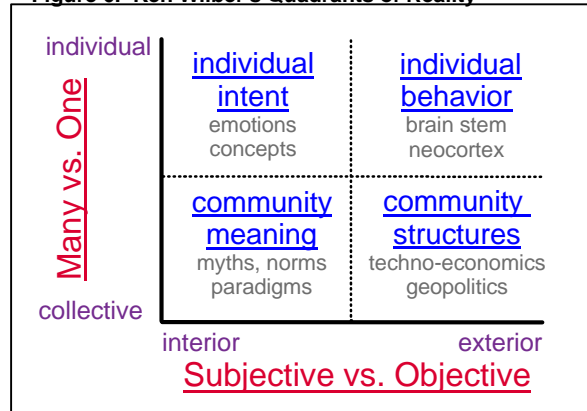


Figure 7. The Greek's Three Spheres

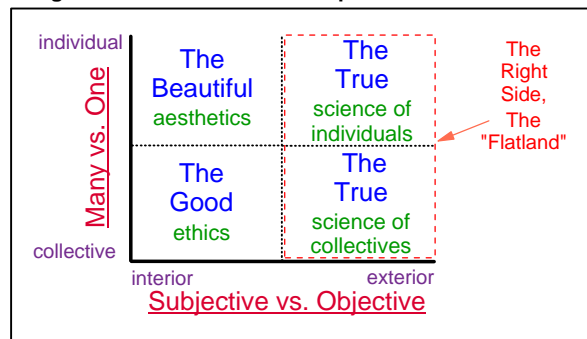
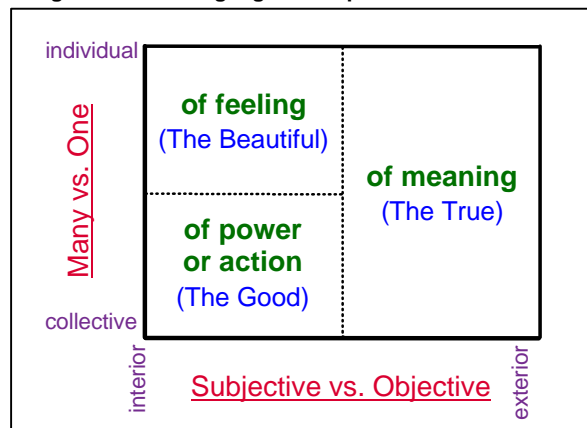


Figure 8. The Languages We Speak



<sup>4</sup> Based on William Isaacs, *Dialogue and the art of thinking together*, 1999, and Ken Wilber, *A Brief History of Everything*, 1996.

<sup>5</sup> M. Scott Peck, *The Road Less Traveled*, 1980, p. 18

<sup>6</sup> Common catchwords to accuse one end are "greed" and "selfishness" and the other end are "individual responsibility" and "local control."

<sup>7</sup> A great example is described in *The Goal* by Eliyahu Goldratt, North River Press, originally published 1984, second revised edition 1992.

An organization can be closed, open or random as shown in Figure 9, depending on where along the collective to individual continuum it is conceived.<sup>8</sup> If there are different points of view within the organization as to which type the organization is, it can create considerable conflict. Clearly, a common understanding of where on this spectrum an organization intends to be is recommended.

A final note: Polarity of views along the vertical axis of Wilber's two dimensions has been the source of tremendous conflict throughout human history. The struggle between those who see it has to be one or the other has created bitter wars between the extremes of communism and laissez-faire capitalism. At either extreme, people have little or no value. In the former people are cogs in the machine of the state and in the latter they are factors of production, commodities to be bought and sold.

### Are all thinking styles represented?

For a group to progress, it must be able to make progress around the "Wheel of Learning" as shown in Figure 10.<sup>9</sup> The group must be able to find the real problem to be solved, generate solutions, decide on the solution(s) to pursue, implement the solution(s) and then continue around the wheel, reflecting on what's been done.

There are four different learning styles and all styles are needed for a group to make progress. Unfortunately, people with different primary styles drive each other crazy. As an example, implementers just want to "get on with it" and see those that reflect as simply wasting time.

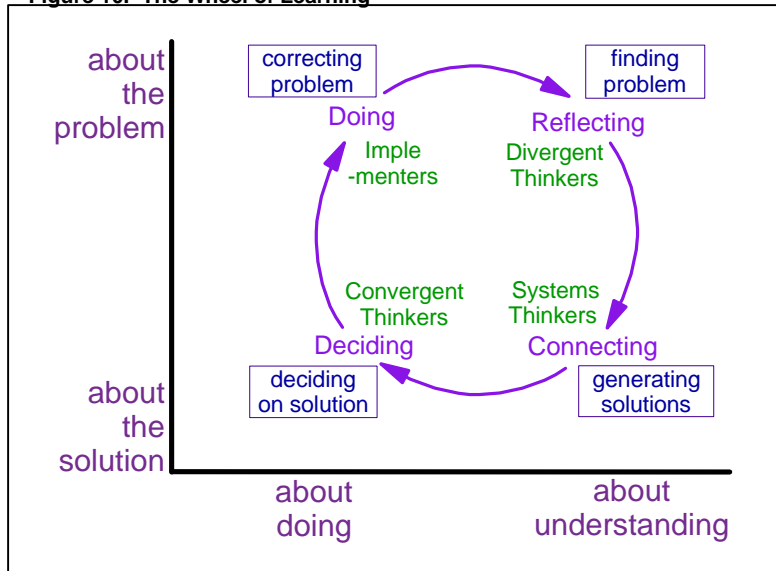
If a type is lacking in the group, or if individuals of that style are blocked in working through the phase associated with their type, the group cannot learn. For example, a group that had no individuals with convergent thinking as their primary style could not make decisions that would "stick" unless all members of the group were present. Because all members were never present at a given meeting, the group could not make decisions. It needed a decision-making process that would bind members who were not present. After the group defined a decision-making process, it was able to make progress.

If a group has all types represented, if it can value the need for different thinking at each

Figure 9. Closed, Open & Random Systems

<u>System</u>	<u>closed</u>	<u>open</u>	<u>random</u>
<u>Focus</u>	collective	balance of collective & individual	individual
<u>Core Purpose</u>	stability through tradition	learning through participation	exploration through improvisation
<u>Tyranny</u>	tradition	process	anarchy
<u>Characteristic</u>	hierarchy	democracy	creativity w/o formal structure
<u>Leadership Intent</u>	good of the whole	balance the good of whole & individual	rapid innovation

Figure 10. The Wheel of Learning



<sup>8</sup> Condensed from William Isaacs, *Dialogue and the art of thinking together*, 1999

<sup>9</sup> Adapted from Peter M. Senge, Art Kleiner, Charlotte Roberts, Richard B. Ross, and Bryan J. Smith, *The Fifth Discipline Fieldbook*, 1994, p. 60, and from Roger Fisher and Peter Ury, *Getting to Yes*, 1981, p. 70.

stage around the wheel, and if it can pass leadership on to those of the appropriate style at each stage. Doing so will allow groups to more easily make progress. The wheel of learning is an important framework, it shows up in some form in many different contexts as shown in Figure 11.

**Figure 11 . The Wheel of Learning: Different Implementations**

Applies	Shewhart Cycle, Deming PDCA	Facilitation Diagnosis – Intervention Cycle <sup>10</sup>	Wheel of Learning (after Kolb) <sup>11</sup>		Air Force Tactics OODA (Boyd)	Circle Chart for Generating Options <sup>12</sup>
			Individual	Collective		
In the real world/ More concrete	Do/Act	4. Describe observations 5. Test inferences 6. Help group decide whether & how to change behavior	Do	Coordinated Action	Act	Action Ideas
	Check	1. Observe behavior	Reflect	Public Reflection	Observe	Define the Problem
In theory/ More abstract	Plan	2. Infer meaning	Connect	Shared Meaning	Orient	Diagnose
		3. Decide on intervention (whether & how)	Decide	Joint Planning	Decide	Develop Approaches

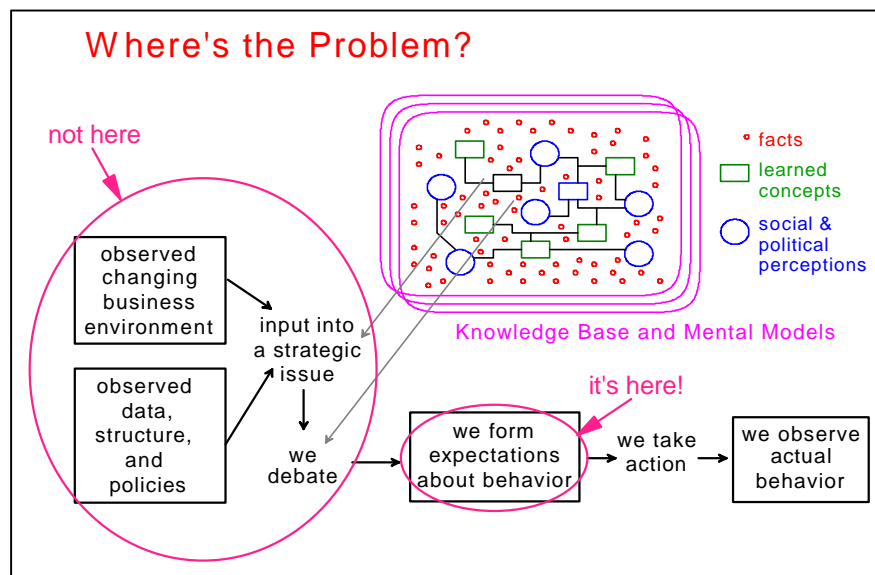
### Is the problem dynamically complex? If so we need systems thinking.

Dynamically complex problems have multiple feedbacks with long delays. That is, the results of actions we take have effects that, after a long delay, come back to affect us. Even relatively simple situations can be dynamically complex when long delays are introduced. But this is a problem because we have not evolved to manage dynamic complexity. For example, most of us are very capable of driving a car. But when delays are introduced because we're tired, or driving under the influence, we're not capable of performing the task satisfactorily. As we know, there are even laws against attempting to do so. Human performance deteriorates markedly as time delays grow longer and feedbacks grow more powerful.<sup>13</sup>

And this is exactly the same problem we have in organizations or economies. There's a long delay before we perceive the need to make a correction; and, once we make a correction, there are long delays before we see the results of the correction. In such situations, we have debated what to do and decided on actions based on our observations and our combined knowledge. Much of the time, when things do not work out as we expect, we believe it's because we didn't have enough data. Instead, as shown in Figure 12, the problem is our inability to correctly form expectations.

<sup>14</sup> We need practice with systems thinking and even system dynamics modeling to make the policy decisions that will lead to the results we desire.

**Figure 12. Why Our Solutions Don't Work Out as We Think They Should**



<sup>10</sup> Roger Schwarz, *The Skilled Facilitator*, Jossey-Bass, 1994, p. 68.

<sup>11</sup> Peter M. Senge, Art Kleiner, Charlotte Roberts, Richard B. Ross, and Bryan J. Smith, *The Fifth Discipline Fieldbook*, 1994, p. 60.

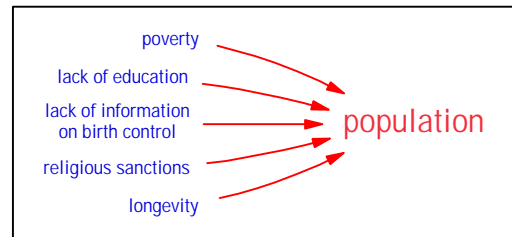
<sup>12</sup> Roger Fisher and Peter Ury, *Getting to Yes*, 1981, p. 70.

<sup>13</sup> John Sterman, "Learning in and about complex systems," *System Dynamics Review*, Summer-Fall 1994

<sup>14</sup> John Morecroft, "Executive Knowledge, Models, and Learning," in *Modeling for Learning Organizations*, Morecroft & Sterman, Eds., p. 6.

When problems are dynamically complex we must give up “factor thinking”,<sup>15</sup> shown in Figure 13. Factor thinking assumes individual factors influence population and a multiple regression approach is used to estimate future population growth. Many of the problems with which we have difficulty require complex considerations of cause and effect.<sup>16</sup> Humans have not evolved to do this naturally. For such problems we must move to systems thinking as shown in the stock and flow diagram of Figure 14. Population is a stock, the accumulation of the difference between the flows (births - deaths). Examples of the links are and “S” (Same direction link), more “kids per couple” gives more “births” (or less give less), and greater “longevity” gives fewer deaths (or lesser gives more).

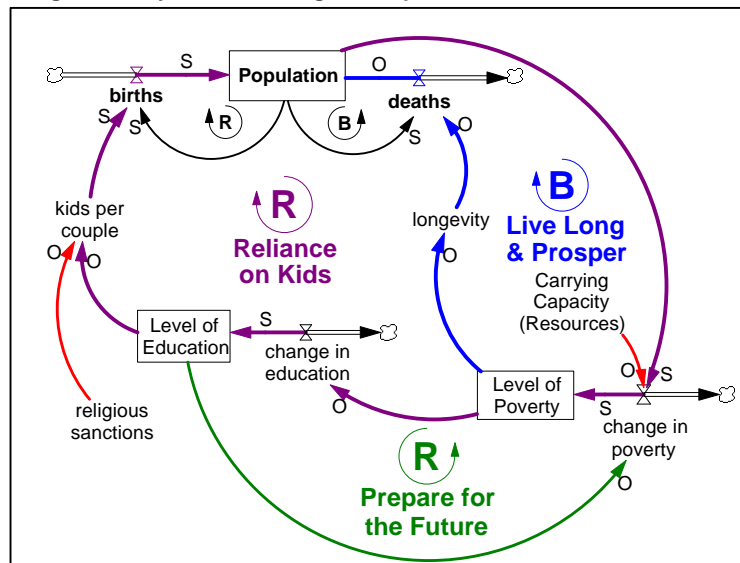
Figure 13. Factor Thinking and Population



System dynamics is grounded in feedback control and nonlinear dynamics. It moves relationships between variables to the forefront and numbers to the back, whereas a spreadsheet does the opposite. This is an important shift.

Strange that ... nonlinear phenomena that abound so widely in nature should be so intractable. It is almost as if Man is to be denied a complete knowledge of the universe unless he makes a superhuman effort to solve its nonlinearities. ... It seems entirely plausible that the qualitative habit of thought will entirely supersede the present quantitative one in mathematics. There are certain indications in science and many in mathematics which point to the analysis of structure as the mathematics of the future. In simple language, it is not things that matter, but the relationship between them.<sup>17</sup>

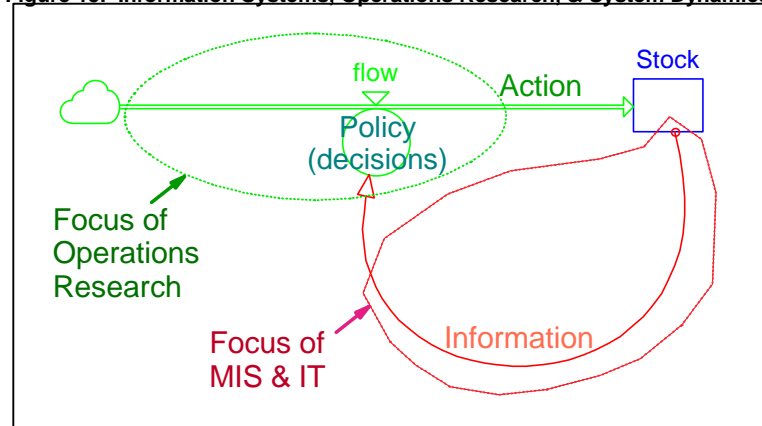
Figure 14. Systems Thinking and Population



As illustrated in Figure 15, Jay Forrester writes that system dynamics

... deals with the interactions around the loop in its entirety. Information (MIS & IT) and policies (OR) are not sufficient. The structure of interconnections and the interactions are often far more important than the parts. Some approach (such as system dynamics) must examine the structure and dynamics of the entire loop before the performance specifications can be determined for the component (information & policy) areas.<sup>18</sup>

Figure 15. Information Systems, Operations Research, & System Dynamics



As Russell Ackoff notes in his paper on “Management Misinformation Systems,”

The moral is simple: one cannot specify what information is required for decision making until an explanatory model of a decision process and the system involved has been constructed and tested. Information systems and subsystems are control systems. They cannot be designed adequately without taking control into account.<sup>19</sup>

<sup>15</sup> Barry Richmond, "Systems thinking: critical thinking skills for the 1990s and beyond," *System Dynamics Review*, Vol. 9, no. 2, 1993.

<sup>16</sup> Nigel Nicholson, "How Hardwired Is Human Behavior?," *Harvard Business Review*, Jul-Aug 1998

<sup>17</sup> Ladis D Kovach, "Life Can Be So Nonlinear," *American Scientist*, 48, no. 2, June 1960, p. 218-225.

<sup>18</sup> Jay Forrester, "A Response to Ansoff and Slevin," *Management Science* 14, #9, 5/68

<sup>19</sup> Russell Ackoff, "Management Misinformation Systems," *Management Science* 14, #4, 12/67

## Have defensive routines taken hold?

We often don't talk about the real issues because we're afraid of repercussions of some kind. This is why Deming says, "Drive out fear." Because of fear, we become defensive. Argyris says, "We are the carriers of defensive routines, and organizations are the hosts. Once organizations have been infected, they too become carriers."<sup>20</sup> This explains Peter Senge's statement "How can a team of committed managers with individual IQs above 120 have a collective IQ of 63?"<sup>21</sup>

Defensiveness leads to a downward reinforcing loop of conflict and organizational dysfunction, which is very costly. Figure 16 shows the feedback processes that lead to a downward spiral of organizational dysfunction.<sup>22</sup> "There is an unspoken code of silence in most corporations that conceals the full extent of a corporation's competitive weaknesses. But a threat that everyone perceives and no one talks about is far more debilitating to a company than a threat that has been clearly revealed. Companies, like people, tend to be at least as sick as their secrets."<sup>23</sup>

To reverse this downward spiral to create an atmosphere of constructive conflict, Argyris says we need to adopt what he calls his Model II Theory of Action.<sup>24</sup> Model II behaviors openly illustrate:

- how we reached our evaluations or attributions
- how we crafted them to encourage inquiry and testing by others.

This is made possible by acting according to Model II governing values, which are:

- Valid information (observable and testable).
- Informed choice (full disclosure of data & reasoning).
- Vigilant monitoring of the implementation of the choice in order to detect and correct error.

The advantages of Model II behaviors are that they

- minimize anti-learning defensive routines,
- facilitate double-loop learning, and
- engage embarrassment and threat, rather than bypassing and covering them up.

## What are our expectations about learning?

Conflict can result from flawed mental models that create unrealistic mental models about learning.<sup>25</sup> Figure 17 shows our common misperception of what the learning curve is like. In line with our

Figure 16. Self-Fueling, Uncorrected Group Processes

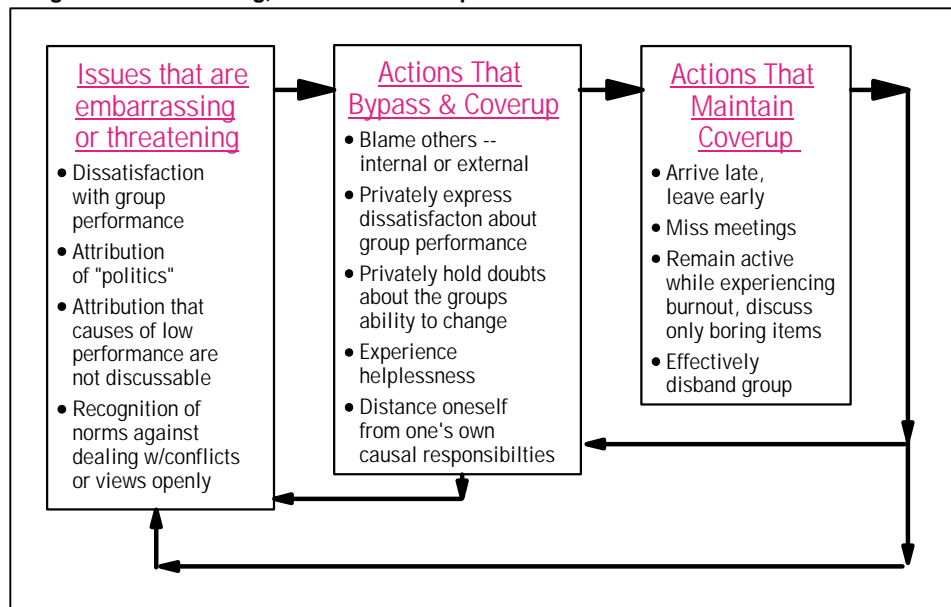
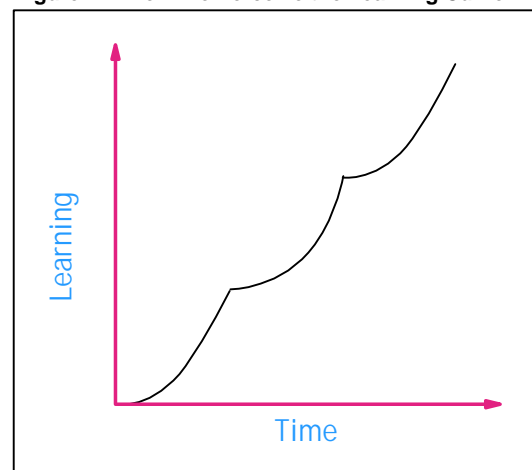


Figure 17. How We Perceive the Learning Curve



<sup>20</sup> C. Argyris, *Strategy, Change and Defensive Routines*, 1985

<sup>21</sup> Peter Senge, *The Fifth Discipline*, (1990)

<sup>22</sup> Chris Argyris, *Knowledge for Action, A Guide for Overcoming Barriers to Organizational Change*, 1993, p. 44

<sup>23</sup> Tracy Goss, Richard Pascale, & Anthony Athos, "The Reinvention Roller Coaster: Risking the Present for a Powerful Future," *Harvard Business Review*, Nov-Dec 1993

<sup>24</sup> Chris Argyris, *Knowledge for Action, A Guide for Overcoming Barriers to Organizational Change*, 1993, p. 55

<sup>25</sup> George Leonard, *Mastery, The Keys to Success and Long-Term Fulfillment*, 1991

expectations of instant gratification, we expect that there will be ever-upward spurts of learning.

Unfortunately, the learning curve is more like what's shown in Figure 18. We learn and then fall back to a plateau. We have to stay on the plateau for some time to consolidate what we've learned. Because we have unrealistic expectations we often give up, saying, "This isn't working, I give up."

If we do have the patience to hang in there, there's another pitfall. Just before we start the next increase in learning, we need to realize that we don't know everything and that perhaps some of what we've learned is flawed ... we're not doing it quite right. Though this realization is necessary for improvement, it leads to discouragement and, again, can lead to dropping out.

This is not just a problem for individuals, it's also a problem for organizations. When organizations are not aware of the delays associated with seeing the results of long-term, high leverage improvement efforts, the initiatives are dropped too soon.

### Is the Hierarchy Appropriate?

In the discussion of systems considerations, structure was mentioned prominently. Appropriate policies are required for structure to produce the behaviors we desire. Important policies related to hierarchy have been addressed by Eliot Jaques.<sup>26</sup> He explains that there should be no more than 7 levels in an organization as shown in Figure 19.

The time span considered at each level should be longer and the pay greater at higher levels. Conflict results if one person reports to another where either the time spans their positions are responsible for is the same or the pay is the same.

### Conclusion

These are major sources of conflict. Being aware of them can help us recognize when they're the cause of conflict. If we have the communication skills and, in groups, if we have a process that promotes communication, we have a chance to get to the root of the conflict, rather than trying to "manage it" away. In some ways, it's amazing we're not always at each other's throats.

Figure 18. What the Learning Curve is Really Like

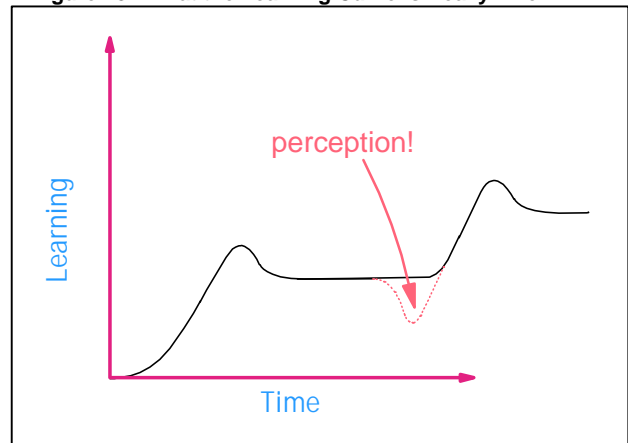


Figure 19. The Levels of Hierarchy

LAYER	Time Span	Felt Fair Pay (\$K)
7	20 years	1,040
6	10 years	520
5	5 years	260
4	2 years	130
3	1 year	68
2	3 months	38
1	1 day	20

<sup>26</sup> Jaques, E., "In Praise of Hierarchy," *Harvard Business Review*, Jan/Feb 1990