

CODI Introductory Session on Leadership in Complexity

[An Introduction to Leadership in Complexity: Practical tools for contemporary leadership]

- Intro, overview of evening
- Introduce you to two tools/techniques that are specifically designed to address perception and focus in complex environments to help leaders and OD practitioners used to dealing with complicated situations to reframe their thinking towards complexity, in practical ways

[A Fish Story]

- Begin with a fish story, specifically the story of Canada's east-coast cod fishery and its collapse as a case study of what happens when you treat a complex system as a complicated system (which is the way most of us have been trained from childhood)

[Dean Bavington]

- History courtesy of Dean Bavington, Canada Research Chair in Environmental History at Nipissing University, author of *Managed annihilation: An unnatural history of the Newfoundland cod collapse*.

[Cabot and the Fish]

- John Cabot (15th c.): “The sea is so full of codfish that the progress of the ship is impeded.”
- Thomas Henry Huxley (Proponent of Darwin's natural selection; 1880s): “The cod fishery is ‘inexhaustible’.”

[John Crosbie, Minister of Fisheries and Oceans]

- 100 years later – 1992 – the fishery for Northern Cod was shut down for a 2-year moratorium because of its collapse, and has never returned.

[Original (subsistence) fishery]

- Go out, catch cod (or not) with baited hook, catch other species (or not) ⇒ sometimes the fish are there, and sometimes not; consume/preserve what one needs and sell the excess
- Fishers are integral parts of the fishery and adapt themselves as the fishery itself changes over time
- Fishing capitalism and industrialization, from the late 19th c. ⇒ fluctuations in the fishery played havoc with the business model
- Managing fluctuation in landings is a “problem to be solved” (financial/political/industrial) rather than “nature to which we have to adapt”



[The “fish” is the problem]

- Problem: Fish cannot be managed
- Solution: Scientific Management \Rightarrow does one thing very well—it manages abstractions, and often succeeds – more or less – in forcing reality to conform

[Solution: Transform “fish” into a “population”]

- Fish became a “population” \Rightarrow measured in “biomass,” an abstraction that made them “conceptually manageable,” turning a multitude of fish into a comprehensible, and hence manageable, unit
- Because fish are now comprehensible and manageable by transforming them into a population, efficiency and productivity can be improved through scientific means

[Maximum Sustainable Yield]

- 1950s-1960s: Concept of “Maximum sustainable yield” ...

[Maximum Sustainable Yield (2)]

- ...the amount of fish (in tonnes) that can be removed from the fishery each year while maintaining the overall population at a stable level through stock replenishment (based on fertility, natural mortality, food supply, etc.)

[Trawler Drag Nets]

- Encouraged new industrial technologies to improve “production” productivity (gill nets, draggers)

[1968: Peak cod landing in history]

- >800,000 tonnes, with a precipitous decline thereafter
- Max sustainable yield targets reduced to between 300K and 500K (slight managerial adjustment, and “better” management”)

[Survey trawls to “manage” population]

- Offshore catches used to predict populations; indicated increasing populations for the 1980s
- Offshore fishery found fish easier to catch, and were catching more \Rightarrow must be increasing population; Survey trawls began seeing signs that the stock was in trouble (younger, and fewer, fish)
- Inshore fishery, based on anecdotal experiences, smaller fish caught for their age, particular varieties found, others not \Rightarrow no signs of increase

[Bureaucrats’ Solution to the Discrepancy]

- “Scientific” (i.e., mathematically sound) solution: Average the numbers!

[1992: Commercial fishery collapses, John Crosby (Minister of Fisheries and Oceans) declares moratorium]

[What went wrong? (Fish are not machines)]

- Fish are not machines, they are fish. (Plus: They didn't quite understand that they were supposed to conform to the abstract model.)
- Specific biological explanation: To sustain the population, what is needed are large, old, female fish
- Post-1968, all the large, old fish were removed from the population based on an assumption that fish only needed to spawn once to replace themselves. The 1968 landing was irreparable.
- The concept of "maximum sustainable yield" was a perfect example of abstract empiricism \Rightarrow a perfect model that was absolutely wrong.

[The moral]

- All models are true, until they're not.

[The problem]

- Positivist, deterministic science attempts to domesticate the complexity of nature, translating its complexity into complicated, but tractable, mostly statistically based models. It assumes that variables can indeed be deemed to be independent and held constant. In other words, there is a belief founded in early modernity that natural systems will conform themselves to our scientific conceptions of them.

[The situation]

- Ecosystem view: All variables are in flux, and none is truly independent of the others. The act of fishing changes the genetic makeup of the fishery (i.e., trawling nets naturally select for smaller fish, which reduces the number of spawn and the sustainability of the fishery). The relationship between fishing and fish was scientifically understood as a purely mechanistic interaction. Now, we have discovered that the interaction of fishers and fish is very much relational, that the environment is continually in flux, and that the act of fishing affects the fish themselves.
- The east-coast fishery was never complicated; it was always complex. The desire to manage created the complication, in order to have a comprehensible, and therefore manageable, problem. The intervention of applying a complicating model changed the nature of the complex system in an unpredictable – and devastating – way.
- What does this fish story have to do with organizational leadership?

[The situation 2]

- Contemporary organizations are not complicated; they are, however, complex!

[The Complexity Challenge]

- How to perceive a complex, as opposed to complicated system, AS a complex system.
- How to focus our attention on the factors that are critical to understanding a complex, as opposed to complicated, system (esp. when we're trained to do the opposite).
- How to resolve the duality between intention (planning and execution) and emergence, especially when leaders are supposed to do the former, and not just wait for the latter to occur...

[Leaders' Complexity Motto]

- ... i.e., become comfortable with the Leaders' Complexity Motto ("you may be in charge, but you can never be in control").

[What's the Difference?]

- Music example: Twinkle Theme (Suzuki); Eine Kleine Nachtmusik (Mozart); The Cosmos, from The Heliocentric World of Sun Ra (Sun Ra)
- **Components:** Easily identifiable and enumerated; Identifiable & enumerable (not necessarily easy); Some components are identifiable, many influencing factors are not
- **Value of experience:** Little expertise is needed, success improves with experience; Considerable expertise is needed; success improves with experience; Expertise & experience may/may not be useful, prior success is not indicative of future success
- **Leeway and adaptability:** Leeway can be allowed w/o necessarily compromising success; Leeway cannot generally be allowed; Leeway and adaptability is not only necessary but cannot be avoided
- **Causality:** Strong sequential causality between process steps (testing, repetition, well-known initial conditions help); Very strong sequential causality – the order of activities is crucial; Very limited sequential causality apparent in the process steps as seemingly random occurrences happen – each situation is unique
- **Effect of Change:** Small changes yield small effects, big changes yield big effects; Same as simple systems, but changes cascade down the chain of causality; Because of networked connections creating feedback and feedforward loops, small perturbations create large systemic effects, while large perturbations tend to be absorbed creating small systemic effects
- **Predictability of Outcome:** Following prescribed steps assures success; Precision in component specification and following prescribed steps is crucial to success; Outcomes cannot be predicted from initial conditions or the natures of the component elements – however, effects can be anticipated from the relationships and interactions of the component elements (this is important!)
- **Governing Principle:** Nike rule – Just do it!; Sun Tzu rule – Divide and conquer; Sorcerer's Apprentice response to D & C! Instead, what's needed is a form of Zen awareness and attentiveness to the nature of effects

[Zen and the Science of Marshall McLuhan]

- What does the wind look like? – We can only “see” the wind through its effects. Similarly, we can “see” a new medium by its effects long before the medium itself is obvious. We look not for what the medium does, but rather, what the medium does to us.

[Refrigerator]

- What the refrigerator does, or what we use it for may be interesting, but irrelevant to the study of complexity. What IS interesting are its effects on human interactions and relationships. E.g., reducing the need to buy food daily, reducing trips to the marketplace (as meeting space and communications hub), encouraging concentration of food provision, i.e., “super”markets, enabling an environment for concentration of food production and distribution
- Important to note that this isn’t determinism, but rather enablement of environment change, from which other events emerge ⇒ rerunning history would likely not result in the same outcomes

[The Laws of Media]

- Four Laws which apply to all creations of mankind — tangible or intangible, objects or concepts, concrete or abstract. They do not apply to nature or natural phenomena. That is, they apply to the World Wide Web, not a spider’s web.
- Stated as four complementary questions (LOM 98-99) (illustrated as four quadrants):

[Enhance]

- “What does the artefact [extend or] enhance or intensify or make possible or accelerate?”
- Helps discover enabling environments and present-day driving forces
- Great care must be exercised not to assign relative value judgements to Enhancement/Extension and Reverse or Obsolesce; it is a common temptation to apply dichotomous thinking and value assignment (good/bad, upside/downside, advantage/disadvantage): “Value judgments create smog in our culture and distract attention from processes.” (Marshall McLuhan, in correspondence with Jonathan Miller, April 22, 1970, *Letters of Marshall McLuhan*, 405)
- Examples: Joking and wit enhances playfulness, good feelings, inclusion; e-mail enhances speed of communication

[Reverse]

- “When pushed to the limits of its potential, the new form will tend to reverse what had been its original characteristics. What is the reversal potential of the new form?”
- Reversal suggests the future, and innovation. Great innovations are not extrapolations that often limit perception, but quantum steps that, at first, may seem paradoxical and contrary to the “common wisdom.”

- Examples: Too much joking reverses into conflict, hurt feelings and exclusion; too much e-mail reverses into information overload and perception via pattern recognition

[Obsolesce]

- “If some aspect of a situation is enlarged or enhanced, simultaneously the old condition or unenhanced situation is displaced thereby. What is pushed aside or obsolesced?”
- Examples: Joking and humour obsolesces seriousness and solemnity; e-mail obsolesces understanding via aural clues and contemplative replies (e.g. compared to regular mail) because of the speed intensification
- An frequently observed, tell-tale indicator of obsolescence is that the medium will very often become an artifact of art or sport: e.g. horses, when obsolesced as beasts of burden become “The Sport of Kings”
- Ubiquity is another sign of a medium in obsolescence: Haute couture sets the agenda for the fashion industry, but when the styles are in Wal-Mart or H&M, they are no longer influential
- Original observation came from poetic (epic) form of Greek poetry. In pre-literate Ancient Greece, the poetic form — with rhyme, rhythm, metre — was used as a mnemonic device, as the cultural memory (history) was entirely oral. With literacy, this use was obsolesced, and poetry assumed its modern role as an aesthetic form.
- Interesting observation is television news: News anchors as celebrities, focus on their fashion, style, the “drama of the trauma.” Does this suggest that television news is/has entered its obsolescent phase? If so, what is the medium that has displaced it? Or, is it news itself that has been obsolesced by... what? E.g. by intensified point of view / opinion-creation, perhaps? Advertising? We’ve seen news used as thinly-disguised product placement. What if the “product” we are being sold is the overthrow of an apparently oppressive regime? A political party? A government agenda?

[Retrieve]

- “What recurrence or retrieval of earlier actions and services is brought into play simultaneously by the new form? What older, previously obsolesced ground is brought back and inheres in the new form?”
- Useful for observing precedent and finding long-term structuring grounds
- Examples: Joking and humour retrieves healing (“laughter is the best medicine”); e-mail retrieves Hermes, the messenger and herald of Greek mythology. Hermes was also the Greek god of commerce, invention, cunning and theft!

[Tetrad, Short Version]

- What we will find to be very important in working with the Laws of Media is not merely completing them for their own sake, but rather to stimulate related thinking, by suggesting, for example, “...and what does that change?” or “...and what does that suggest?” in the current context or ground.

[On Board or Flipchart: Tetrad on Wine]

WINE

<p><i>What does the medium EXTEND, enhance, intensify, accelerate or enable?</i></p> <ul style="list-style-type: none"> • Grape juice via fermentation • Food as occasion • Speaking the truth (“in vino, veritas”) 	<p><i>When extended beyond its limits, into what does the medium REVERSE?</i></p> <ul style="list-style-type: none"> • Cooking wine; vinegar • Hangover as confronting reality • Insult, fisticuffs, distortion
<p><i>What formerly obsolesced form does the medium RETRIEVE from the past?</i></p> <ul style="list-style-type: none"> • Natural process of decay; metamorphosis; breakdown as breakthrough • Ritual observance; sacrament • Delphi oracle (whose trances were likely induced by hallucinogenic gases) 	<p><i>What does the medium OBSOLESCE or displace in its former dominant effect?</i></p> <ul style="list-style-type: none"> • Finality of death; disposal of the bad • The commonplace; the mundane • Inhibition

Grounds: 1. Transformation; 2. Festivity; 3. Interpersonal engagement

[Application: Emergence Brainstorming]

- Requirements for brainstorming and other “free association” techniques: Participants, Facilitator, Flipchart, Chocolate chip cookies

[Fallacy of Brainstorming]

- Fallacy of brainstorming: Often, it is a technique used when trying to obtain a breakthrough. Otherwise, it is simply a collective “brain dump.” Neither approach will discover anything particularly new; its highly directed format that focuses on pre-existing ideas tends to prevent discovery of what has been missed.

[Tetrad-Enabled Brainstorming]

- Obtain an inventory of conventional brainstorming pre-existing ideas
- Associate each idea with at least one ground or context in which it has meaning.
- Assign each idea to a tetrad quadrant relative to its respective ground. Resist the temptation to categorize everything under “Ext/Enh.”

[Finding the “Gold”]

- Identify which quadrants are missing aspects relative to each ground (tetrad completeness = all four aspects must exist for each identified ground). Are there grounds that seem to be over-represented, suggesting that certain grounds tend to

have been given less attention? These are the questions you have not asked after you've asked everything you could think of.

[Emergence Brainstorming: The question]

- What is the compelling issue facing OD professionals?

[Paradigm Power]

- Recall the “fish story” \Rightarrow it was the model or paradigm that the scientists and policy-makers created that enabled them to make meaning of what they observed in nature. From that meaning/context, they created their perception of “reality,” that may or may not conform with Reality.
- If the dominant paradigm is inconsistent with what is actually occurring, it can potentially be devastating, particularly more so in times of transition between (Kuhn's incommensurate) paradigms

[The Effect of Models – 3 slides]

- Who believes the sun travels around the earth / Earth travels around the sun / It's turtles all the way down?

[Drucker – 2 slides]

- Natural systems don't care what we think—Drucker: “The paradigm – that is, the prevailing general theory – has no impact on the natural universe. Whether the paradigm states that the sun rotates around the earth or that, on the contrary, the earth rotates around the sun, has no effect on sun and earth. ... But a social discipline such as management deals with the behaviour of people and human institutions. Practitioners will therefore tend to act and to behave as the discipline's assumptions tell them to. Even more important, the reality of a natural science, the physical universe and its laws do not change... The social universe has no ‘natural laws’ of this kind.”

[Remember This?]

- Complexity vs. complication. I suggest that we are in a time of paradigm transition, that complicated models are giving way to understanding the world in complexity terms. However, our dominant models, tools, techniques – *our fundamental conception of organization* – is still based on a model of complication based in the clockwork world of the Enlightenment and Modernity.
- How does a leader deal with outcomes that are unpredictable, when s/he is charged with planning, managing, and executing?

[Effects Can be Anticipated from Relationships]

[Valence Theory]

- A new fundamental model of organization that is based on principles of relationships, emergence, and effects, that has been empirically demonstrated to be useful (*not* necessarily “True”).

[Valence Theory]

- Valence: The capacity of something to react, unite, combine, or interact with something else.
- That is, “the ties that bind,” or specific relationships that enable us to connect with one another in such a way that we come together to form *organization*.

[Valence Relationships]

[Valence Relationships: Creating Organization – 3 slides]

- Each of us “connects” to someone else via one or more of the five valence relationships
- Two (or more) people will connect to one another via several of the valence relationships to create a “proto-organization” (e.g., teams, workgroups, departments)
- Multiple “proto-organizations” connect to one another via several of the valence relationships, and so on, to create...

[The Emergent Valence Organization]

- “That emergent entity resulting from two or more individuals, or two or more organizations, or combinations of both, that share multiple valence relationships ... among its component elements at any point in time.”
- Valence organizations are emergent and contingent, depending on the situational context that gives the organization meaning.
- Who is a member of the organization? Answer is always the same: It depends on the *context* (ground) that gives the question meaning. (E.g., customers, regulators, suppliers, employees, etc.)

[Theories of Action]

- Chris Argyris and Donald Schön provided us with Espoused Theory and In-use Theory, and “double-loop learning” to enable organizations to reflexively and reflectively ensure consistency between intention and outcome (complication model).
- Problem: Espoused and In-use theories of action do not necessarily create an awareness of complex multiplicity of effects; hence...

[Effective Theory]

- Effects are specifically identifiable along the five valence relationships among all of the organization’s constituent members

[Who You Touch...]

[The Problem with Vision]

- When we think about outcomes, objectives, goals, missions, we inevitably think of “vision”—the sensory metaphor that captures the idea of future goals yet at a distance.
- Vision is our only sense that operates at a distance, requires separation, etc.
- Our world is UCaPP; complexity requires close connections and relationships; hence, a more appropriate metaphor for our complex, contemporary world is...

[The Sensory Metaphor for a Complex Environment]

- Tactility: “Whom are you going to touch, and how are you going to touch them, today?”
- Instead of a “vision statement,” contemporary organizations might be better to develop a “tactility statement” that will help both their leaders and members to navigate a trajectory in a complex environment.
- As a side issue, “vision statements” require considerable strategy work to translate into missions, goals, and specific objectives. In contrast, “tactility statements” can be used to effect day-to-day decisions among any of the members, once again helping to resolve the duality between intention and emergence (tactility representing intention; the organization’s goals and specific objectives that are accomplished are emergent).

[Developing a Tactility Statement]

- Five step process:
 1. Who are your member constituencies?
 2. What are the direct valence relationships among them?
 3. Group the identified relationships into themes and name them
 4. Connect themes according to influencing relationships
 5. Order by outgoing influencers

[Tactility Statement Activity on Flip Chart]

- What is CODI’s tactility?
- Approximate tactility statement developed by the group: *“Through enabling learning and development among its various constituencies, CODI facilitates sustainable organizations, providing economic benefit among its members.”*

[Leadership in Complexity, The Two-Day Seminar]

Day 1

Introduction to Complexity

McLuhan's Tetrads

Emergence Brainstorming & Strategy
Development

The Nature of Complex Leadership

The Role of the Emergent Leader

Day 2

Introduction to Valence Theory

BAH vs. UCAPP – Finding “*ba*”

Organizational Transformation

Effective Theory & Developing a Tactility
Statement

Navigating a Complex Trajectory

[For More Information]

- Mark Federman: mark.l.federman@gmail.com
- Weblog: <http://whatisthemessage.blogspot.com>
- Valence Theory: <http://valencetheory.pbworks.com>

About Mark Federman, Ph.D.



AN UNCONVENTIONAL, yet strategic thinker, Dr. Mark Federman has more than twenty-five years' experience in the high-technology industry as executive, manager and consultant, spanning disciplines including research and development, marketing, sales, operations and strategic leadership. He is co-author of *McLuhan for Managers—New Tools for New Thinking*. Some of his recent explorations have examined “Take Me to Your Leaders: Collaborative leadership and the power of trust,” “No Educator Left Behind: The present future of educator reform,” “Generation Gap: Why today’s youth are living in tomorrow’s world,” “How Do We Know: The changing culture of knowledge,” and “Creating a Culture of Innovation.”

Mark provides thought leadership on the consequences of the epochal changes occurring throughout society. His recently completed research at the University of Toronto, *From BAH to ba: Valence Theory and the future of organization*, strives to re-theorize the concept and consequences of organization for our contemporary circumstances. His research findings provide a wider range of questions that can reasonably be asked of practical situations, and substantially more humanistic options for decision making that are not otherwise available to managers. Mark’s practice focuses on Organizational Therapy: assisting leadership teams to develop effective approaches in response to complex challenges of organizational transformation and culture in an environment of continual change.

What is it, specifically, that you do, Mark?

Inspired by the thinking of Marshall McLuhan and a keen concern for mindful awareness of the complex effects we bring about in our world, I strive to create great environments of engagement. Our society is in the midst of an epochal transformation; I am driven to help us all make sense of the complexity of intractable problems, especially as they affect our relationships among those whom we touch as individuals and organizations. I work with organizations going through challenging transformations, and help to heal dysfunctions – especially among leadership teams – that seek to undermine organizational culture.

I facilitate a way of fundamentally changing the context of how we think about organizations. Out of that new context comes new meaning for the everyday interactions, problems, and successes that are an organization’s life. What this boils down to is pretty simple: we are, first and foremost, people—human beings. We engage and interact in complex ways. In order to respect each other and the environments in which we live, we must be mindful of each other, those environments, and the effects that we bring about. In other words, it is essential that we all become mindfully aware of our individual and collective tactility—who it is that we touch, and how we touch them.

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Mark can be contacted via his website, *What is the Next Message?* at <http://whatisthemessage.blogspot.com>, on which he posts his insights, talks, and videos.

