

Rethinking Wicked Problems (Part 2)

Unpacking Paradigms, Bridging Universes

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1

GK VanPatter: Welcome back Min and Jeff. In this Part 2 of our conversation I hope to touch on as many of the following ten themes as possible that are in one way or another interconnected to the subject of “wicked problems”:

- Do human adults have to learn new skills in order to work (solve problems) effectively in cross-disciplinary teams?
- Do human adults have to learn new skills in order to create more ideas?
- Is creative problem solving dialogue different from other forms of dialogue?
- Is technology necessary to do team based creative problem solving?
- Is anyone still using the so-called “waterfall” method today?
- Is solving problems different than creating opportunities?
- What’s the difference between framing a single challenge and framing multiple challenges?
- Are methods such as “Appreciative Inquiry” fundamentally different from creative problem solving?
- Does abductive, deductive, and reductive thinking connect or not connect to creative problem finding/problem solving?
- Is “Integrative Thinking” something new?

Before we get to all that I wanted to ask each of you if you had any thoughts on any aspect of Part 1?

Min Basadur: I do have some reflections on Part 1. Thanks for easing us into some harder work on Part 2.

Jeff made a very interesting observation near the end of the discussion about problem definition which I have summarized as:

"Rittel understood that solving a wicked problem is more emergent and interactive than any prescribed linear sequence of steps can deal with." "In this regard I am struck with one part of Basadur's response to the previous question. He seems to accept that the linear model is flawed, but his adjustment of the model is to add some sophistication to the problem definition phase, so that you define the problem "correctly" before proceeding with a linear solution formulation process. This appears to be a classic Generation 1 approach -- if the difficulty with a linear design process is problem definition, then you simply work harder and better at defining the problem precisely before proceeding to the solution. In contrast, the direction in software development practice is more representative of a Generation 2 approach -- you accept that you won't understand the problem until you've created a solution, so you start writing code and building and testing prototypes very quickly, in short iterative cycles, with users deeply involved in the process from the beginning. The problem formulation evolves and emerges in parallel with the solution formulation -- that's what makes the process non-linear."

I agree fully with Jeff's two key statements above, which are the first and last ones. Furthermore, I fully understand his comments that lie in between these two book-end statements, that is, why my comments seem to create some confusion about our approach to non-linearity. So let me try to reduce the confusion.

One of the keys is that very different styles of thinking and understanding exist and underlie the handling of wicked problems. Let me emphasize that our approach to problem definition is anything but linear. It is totally interactive and iterative with all stakeholders involved. The final emerging definition is not singular, but instead an array linking together many differing problem definitions representing many different points of view, angles, bits and pieces, and hierarchical levels. Each piece (unique problem definition or sub-problem definition) of the “puzzle” in the overall picture is created and related to several others in the same vast array. As the understanding increases, the solutions begin emerging. In fact the solutions that are finally selected can easily be re-inserted into the problem definition array of challenges. They represent relatively more tactical challenge statements which feed the more strategic challenges statements higher in the array.

Next, it is difficult to understand this non-linear approach that we take to teaching and applying problem definition until the approach is experienced. The conventional concept of a single “correct” problem definition is hard to shake vs the opposite: a visual picture of a whole set of interrelated challenges. The creative work actually lies in the problem defining activity. Creative solutions are virtually self-evident and often reside within the problem definition array or picture. This emphasizes the most critical aspect of our approach... that is that understanding (learning) is completely intertwined with inventing (thinking) in the problem solving process. Problem solving is really a continuous cycle of inventing and learning. As old connections are broken, new connections are made, and in turn the new connections become old connections ready to be broken, etc. (This is W.J.J. Gordon’s great paradigm (B1,2,3).

Now here is the crux of the matter. Learning can occur either by concrete experiencing of something, or by analytical theorizing about it. Our educational system virtually ignores the former, which we call the “Aha!” phenomenon, best described as the sudden apprehension, internalization or awareness of a concept by experiencing it. Furthermore, different people prefer one kind of learning over the other, and when tackling problems, a lack of appreciation for the preference of one or the other can create significant frustration and a corresponding reduction in performance. Regardless of style, for most people there really are some things that can only be learned through experiencing. One of these is our awareness of our personal thinking blockages that suddenly come to us with a rush through a significant “aha” experience. My dissertation on creative problem solving was based on this internalization principle and our teaching/training of problem solving skills attempts to build on it.

This kind of learning flies in the face of most university teaching which is highly linear and totally theoretical...well thought out “correct answers” are transmitted to students to absorb theoretically, and if you can’t explain it in writing, then it cannot exist. Little or no effort is expended on teaching how to “discover” new understanding and how to “create” problem definition in new unique situations, not in prescribed case studies. And this is why the iterative, interactive approach to problem definition is so different to conventional teaching. This is also why so many people after finishing school make a habit of rushing directly to solutions to complex problems that they encounter. They lack the patience and skill of deferring judgment and devoting significant effort to understanding and defining fuzzy situations and letting creative solutions emerge.

Jeff Conklin: My big take-away from Part 1 has been a new clarity about the place of “problem wickedness” in my own work. In the course of our conversation I realized that the practical significance of the distinction wicked problems is about process: the context it provides for adopting non-linear, widely-inclusive problem solving approaches. Once a problem has been identified as wicked it gives us permission to stop fixating on getting the “correct answer” and get serious about the heavy lifting needed to come to shared understanding about the dimensions of the problem. Of course, the freedom to get real about the work to be done comes at a price: it is much more challenging to allocate resources for projects that involve a significant amount of collective learning about the unknown!

As for Min’s reflections on Part 1 immediately above, I am both a little disappointed and very excited. During Part 1 I had the impression that Min and I really differed in our views on the notion of wicked problems and how to address them – I thought we might have a fun little debate going here.

Instead, I agree with everything he said. I find a wonderful correspondence in our views and the approaches we have evolved for dealing with problem wickedness. Min’s “array linking together many differing problem definitions” corresponds, I think, to my “network of issue discussions”; I share Min’s commitment to including the full range of thinking and learning styles, such as concrete experiencing and analytical theorizing; I struggle with the challenge that most people don’t really get the CogNexus non-linear approach (dialogue mapping) until they experience it, just as Min describes for his work; and we both have discovered that the reputed difficulty of getting a robust solution transforms into self evident clarity when the soil has been adequately tilled with crafting shared understanding about the problem space.

I am especially excited about two things I heard Min say. First, that “the creative work actually lies in the problem defining activity.” This is a bit counter-intuitive – I had supposed that the creativity Min was talking about in Part 1 was directed toward coming up with solutions – but Min is pointing to the deeper intention of non-linear approaches: supporting the integrity of learning and human interaction that wicked problems demand. This insight gives me a fresh perspective on the work that I’ve been doing.

I also like the idea that we need new ways to help develop “the patience and skill of deferring judgment,” as Min says, and the commitment to devote “significant effort to understanding and defining fuzzy situations and letting creative solutions emerge.” A new discipline is emerging for this whole arena of boosting a group’s collective intelligence in the face of immense technical and social complexity. Gee ... maybe we could call it “Generation 2,” in honor of Horst Rittel! Whatever we call it, I think GK is going to help us try to articulate some principles for this emerging discipline.

2

GK VanPatter: In the interest of covering more ground, lets move on. From your personal experience and perspective, do human adults have to learn new skills in order to work (solve problems) effectively in cross-disciplinary teams?

Jeff Conklin: My sense is that it takes considerable maturity for a professional these days to be good at working effectively across disciplinary boundaries. It's worth noting, however, that differences in discipline are just one of the kinds of diversity that increase social complexity and fragmentation among stakeholders. Differences in organizational function and in personal learning style can also make the going tougher, and increase the need for collaborative literacy. I have a client who is the director of environmental policy at a large company. On several occasions, in meetings on complex environmental policy issues, I have watched him dealing with a colleague who had taken a position with which I knew he strongly disagreed. His approach is always tactful and respectful and often has a playful quality. He asks questions from a place of genuine interest in their answer, in learning about the colleague's view of the world. He listens carefully. And often he comes up with a new idea that opens a new way forward.

Here are a few of the special skills I have observed being useful when a problem is wicked and the stakeholders are diverse:

1. Willingness to suspend certainty that he/she knows what "The Answer" is, and ultimately, willingness to be wrong and to learn in public.
2. Willingness to entertain more than one point of view about the problem is, hence Lawrence Peter's wonderful quote, „Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them.“
3. Patience with other people's learning styles and process needs, including a commitment to casting the widest possible net for shared understanding and shared commitment amongst a diverse group.
4. A capacity to listen deeply and intelligently to points of view which seem strange, wrong, or just plain confused.
5. Commitment to getting traction and moving the issue and the group to a new place through coordinated action.

Although I think these are signs of maturity, I have also seen that in practice it may not be so much a matter of learning these skills as unlearning their opposites, such as the impulse to get quickly to "The Answer", conviction of one's infallibility, etc.

Min Basadur: The answer is definitely yes, new skills are needed, and for several reasons. Many of the reasons become more clear at the organizational view rather than the product creation view. It is impossible to see the many challenges through the lens of product creation. Product creation is only one small aspect of what organizations are grappling with today. Our organizational transformation work takes place in a much broader context.

One of the reasons why new skills are needed is that the size, number, complexity and time pressures of the issues facing organizations today have increased exponentially. Certainly the reason that I was able to get started in my new career as a “creative problem solving consultant” at Procter & Gamble was directly related to these critical factors.

As the world outside the organization changed and became more complicated, competitive, and fast moving, the company recognized that new levels of creativity and problem solving were needed – that it was impossible for people to handle all the problems and opportunities coming at them with standard linear procedures and on an individual basis. No one individual could handle the number of issues because there were so many diverse aspects to them. You had to get people working on interdisciplinary teams inputting their piece of the puzzle because no one person knew everything. Often we discovered that we had to operate in new areas of uncertainty. Teams assembled from diverse areas of expertise had to put together the best solutions and plans they could using many fragmented and incomplete pieces of the puzzle and trust their collective judgment to move ahead with some uncertainty. More often than not, identifying what was NOT known was more important than figuring out what WAS known.

Today, most problems everywhere are similarly multi-faceted. Gone are the days when you could say that a problem is just a product development problem, or a marketing problem or a purchasing problem. Often problems are interwoven, mixed together, to form larger issues facing the organization. The speed with which we need to address problems and opportunities has also changed. We simply do not have time to do things the way we used to where everything was sequential. We must work in parallel now. With complexity rising and time frames being compressed, the need to be able to work together across disciplines has never been greater.

Another reason that new skills must be learned is that the ante has been raised beyond coping with efficiency to coping with adaptability. In yesterday's relatively stable world, organizations might have been able to concentrate on improving efficiency alone but in a changing world that focus alone is no longer enough. While efficiency implies mastering a routine, adaptability means mastering the process of deliberately changing routines. To remain viable today, organizations must mainstream adaptability thinking and get it to be part of the day-to-day fabric of the organization.

Efficiency mastery often implies "finding the flaw" in the current procedure (and restoring the procedure to its prescribed level). This is essentially what we learned to do in school with multiple choice and true/false tests. Many adults learned to survive in organizations in the "old days" by concentrating on efficiency. In our "new world" of accelerating change, many of us have been ill equipped by our past experience to expand our thinking skills and behaviors to concentrate on adaptability as well. The main difference is that efficiency is problem SOLVING in nature and adaptability is problem FINDING in nature. Some of the reasons why teamwork can be difficult and frustrating is directly connected to lack of skills. For example, many adults are not aware of the difference between content (WHAT we are doing) and process (HOW we are doing it) and so continuously mix them, creating confusion.

In our work, we stress the importance of synchronizing divergent and convergent thought throughout the innovation process. The trigger is the skill of deferring judgment which permits the separation of the two. These are very important skills in successful teamwork yet it is not uncommon to find them fully missing in meetings, in organizations. I believe we discussed this important subject in our previous NextD Journal, Conversation 1.0 Innovation: Teaching HOW Now that was completed in 2003.

In that conversation we discussed problem solving styles, problem finding, why teamwork can be difficult and other important issues related to skill. I believe readers interested in this subject can still download that conversation.

<http://nextd.org/02/01/01/index.html>

From our perspective, part of the task in engaging in organizational transformation is to be honest about the skills that we now have, in many cases these are skills that have been taught in our schools for decades. For us this an important aspect of “being authentic” and is central to all successful relationships with our clients. We talk about what is really going on. We know that regardless of whether one attended engineering school, business school etc it is unlikely that the focus was on adaptability, change making. It is unlikely that many learned specific skills for use in the context of team-based cross-disciplinary innovation. Those two factors alone make it quite clear that new skills are needed.

3

GK VanPatter: I can see several similarities and differences emerging here but not to the degree that I expected. Let me direct this next question to Jeff.

Jeff, help readers understand what you mean by: “it takes considerable maturity for a professional these days to be good at working effectively across disciplinary boundaries.” Some might assume that you are suggesting a correlation between age and or work experience and an ability to work across disciplines. Is this what you meant? In your book, Dialogue Mapping you wrote:

“It is tempting to suggest that project meetings look the way they do because people are ill-bred or under trained. One solution is training - course, seminars, and workshops that impart new knowledge to employees about better ways to act and interact. As an extension of the socialization process, this approach has its place in the human resources toolkit but the modern knowledge worker does not need additional training in how to behave – he and she need better tools for dealing with social complexity, for managing the nonlinear flow of opportunity-driven cognition, for constructing coherent views of the mess created by fragmentation and information overload.”

These statements from the Dialogue Mapping text seem to imply a preference for recommending to organizations that they need to change their technology tools rather than change their behaviors. Is this your view?

Jeff Conklin: Not exactly. I think behavior is a big issue, and I really like many of Min’s ideas about the range of skills that are often missing in cross-functional teams. I especially like the orientation of “problem finding” – just considering the concept is exciting and challenging.

I wonder, however, how literally Min means to imply that members of cross-functional teams need to “learn” these new skills. This is the gray zone between teaching and facilitation. Many professional skills are learned on the job, not in a class. As in classes, the speed and quality of on-the-job learning depend on the quality of “instruction.”

The kinds of process skills and distinctions that Min identifies are often more demonstrated than taught ... by a skilled facilitator (or manager or team leader) who guides and focuses the group but also is transparent (or perhaps even pedagogical) about what he or she is doing. Indeed, my sense is that Min's approach is as much about facilitating groups through the kind of process he describes as teaching them the skills to do it themselves.

It's true – I do love tools. I am fascinated by the idea that structure shapes behavior, and that by altering the environment in which cross-disciplinary work is trying to happen, you can organically change people's behaviors. I'm more than fascinated – I'm kind of obsessed with the idea.

Yes, tools are part of the environment, but the “container” includes more than tools – it includes practices (such as mentoring and leadership) and specialized roles (like facilitator and coach) and language (such as new terms and meaning for chestnuts like “problem” and “problem solving”) ... and even training (in measured doses). All of these aspects of the environment shape behavior, and alter the skills that are needed and appropriate.

For example, you can train people to go the speed limit, or you can put in speed bumps or an electronic sign that shows drivers their speed. You get a behavior change ... but were new “skills learned”?

Or ... you can teach the kids to close the screen door, or put a hydraulic closer on it. No teaching, but old behavior becomes irrelevant.

And again ... if you the tools you put on people's computers are really great for creating stand-alone documents that are devoid of social context, and those tools are lousy for sharing information and creating shared understanding, then much of their behavior will be about isolated documents and linear/hierarchical process. The tools we use shape our behavior.

I suspect Min and I are pointing to this same notion of the importance of the “container” in which cross-functional work is trying to happen, perhaps from different perspectives. Min makes a very strong case that work occurs in a new environment (i.e. the shift from efficiency to adaptability), and that employees need new skills and behaviors for organizations to stay effective. But it's too easy to focus on “learning” as the trim tab for change. Learning happens. People are learning all the time, you can't stop it. As Chris Argyris has pointed out, what successful people have learned in many organizations is “skilled incompetence” – skillful behaviors that optimize the status quo and leave the organization frozen and unresponsive. People are smart. Many of the dysfunctional and anti-collaborative behaviors that we see are actually a rational response to a dysfunctional environment, which teaches and reinforces those behaviors.

Here's a very simple example of a tool that changes collaborative behavior. One of the more wasteful aspects of collaborative meetings is the amount of repetition ... people making the same points over and over. In dialogue mapping, when someone makes a point, the facilitator captures the point in a “dialogue map” projected on a screen. The first time someone repeats a point that's been made before, the facilitator points to that part of the map and asks, “Are you saying something different from this?”

Pretty soon the whole group gets the idea: it's no longer functional or rational to keep repeating your points. New thinking -- new ideas, new questions, new pros and cons -- all gets woven into the map. Repetition, nothing happens.

But the group didn't "learn" a new skill. They simply started working in an environment that, because it includes a shared group memory, no longer requires participants to keep repeating their old points.

I think Min is eloquent and persuasive about new process skills and distinctions that people need to learn. I'm curious if he would feel just as comfortable talking about "adjustments to the environment"... tools and structures that organizations need to embrace to foster more effective cross-disciplinary work.

4

GK VanPatter: Min would you like to respond to Jeff's comments before we move on?

Min Basadur: It is important to not confuse learning with teaching. I am speaking of learning, and more specifically, learning to use specific cognitive skills, tools and behaviors.

In our work, we help organizations in a number of ways through what we call application sessions and through skill-building sessions. In the skill-building aspect of our work we facilitate and model the use of what we call a system of applied creativity. It is a system that contains multiple interconnected components, not just process. The system is simple, inclusive, and interconnects a four-stage (or eight step) process of creative problem solving with cognitive skills and tools to make the process work. The way we build skills is experiential and always focused on the application to real world problems of the participants' own choosing. When we lead application sessions to solve pre-selected problems, we also build skills ongoing to help the team achieve results, so skill building happens naturally and with a clear purpose.

We find that as real progress is experienced through practice, participants find that their confidence in tackling tough issues builds. In a nutshell, any "skill-building" that is done is wrapped up in real world problem solving application and vice versa. We differ from content expertise based consultants in the sense that our role is to be the "guide on the side," not the "sage on the stage." Another point of difference is that we are, in a very real way, transferring innovation knowledge into the organization and beginning to help transform it.

In reference to Jeff's question about "adjustments to the environment": People can build their applied creativity expertise at three increasingly complex levels: individual, as members of a group, or as an organization as a whole. If an organization sincerely wishes to operate at the third level, (i.e, achieve a "culture change"), it can do so by doing more than running isolated application/skill building sessions.

Instead, we involve the senior leaders in co-creating a unique innovation strategy using their own terminologies and the specific challenges that they face. The strategy which is created is comprised of three simultaneous components. One component is a clearly

defined “business need” which is relevant and motivating to all the members of the organization (“what’s in it for me?”).

Another is a common applied creativity method that everyone in all disciplines can rapidly learn to use and one that is applicable to their everyday challenges wherever they might be physically. No special electronic technologies are required. A third component designed is a customized, well-managed infrastructure by which the application of the method to the business is assured and results are tracked.

This infrastructure can involve many components but often takes shape as a system of interfunctional teams, for example, targeted at specific opportunities identified within the “business need.” The senior leaders learn and model the cognitive skills, tools and behaviors first. If this strategy is well executed, a more innovative environment is created as a result.

Call it what you like; a creative problem solving organization, an innovative organization, etc. In other words, if innovation is really important, then at least one of the top few strategic organizational measurable goals must be driven directly by innovative skills, tools and behaviors that are to be learned by the members.

Otherwise, the organization is merely “playing a game” and not really taking innovation seriously. Without building sustainable skill, the organization will be susceptible to the ongoing need for external consultants for many years to come. We tend to work with organizational leaders who are serious about driving transformation and building real innovation skill.

5

GK VanPatter: I think it is possible that we have, in this conversation, at least three views of what constitutes the innovation container or the environment in the context of organizations. Environment is one of those tricky words that can mean several things. We each might be using that word in slightly different ways. It is quite likely that each view is connected to our personal backgrounds, expertise, experience, and realistically to consulting services. Correct me if I am wrong: Jeff seems to focus on a technology application tool of a specific type that is intended to serve a specific innovation related purpose. Min focuses on a specific type of cognitive skill-building that in turn impacts behaviors that are intended to result in a more innovative environment or culture.

At Humantific we created a six dimensional innovation ecology model numerous years ago that contains the two dimensions of technology and process skills/behavior but also includes four additional dimensions that play important roles in organizational innovation enabling or transformation enabling from our perspective. In our innovation ecology model we also include inclusive innovation strategy, inclusive information, inclusive teams and the physical environment itself as each plays a role in accelerating innovation. In practice, we use this innovation ecology model as a visual explanation tool in all of our organizational transformation work.

Similar to the approach that Min described, we find it most effective in working with organizations to first link into our clients specific business needs. Most clients have a crisis of the moment that they are seeking help with. In addition we look for and try to connect into wider, longer-term innovation related objectives.

Today those expressions are most often found in various corporate strategic communications including corporate strategy, corporate vision and corporate values. There we often find general and detailed expressions of challenges and intents. We often find that innovation has been articulated as a corporate value at the highest level of the company.

Most often missing is a detailed strategy for how to make the vision into concrete action across the entire organization. In this sense we distinguish between the business needs expressed in corporate strategy and innovation strategy. Innovation strategy is about how the organization is going to realize its stated goals that are most often connected to increasing growth, sales, productivity, product pipelines, service creation, improving customer experiences, reducing costs, fixing something that is broken, inventing something new, industry leadership, competitive advantage etc. Many organizational leaders have great corporate strategies but need help with the how to get there part of the equation, how to actionize their stated innovation related goals whatever they might be.

Corporate Vision, Corporate Strategy (Business Need), and Corporate Values are what organizations often have that we build off and connect into.

What organizations often do not have is a way to look at innovation in practical terms that connects directly to their business. We help them make sense of a lot of complexity and make those connections. With the goal of creating an innovation focused cross-disciplinary culture we bring new forms of sense-making to the organizational innovation space.

Humantific's Whole-Brain Innovation Ecology

- Whole-Brain (Inclusive) Innovation Strategy
 - How to realize the business need
 - How to maximize the brainpower in the organization
- Whole-Brain Process (Methods Mastery)
 - Inclusive of pattern creation & pattern optimization
 - Adaptable to all kinds of fuzzy complex challenges
- Whole-Brain Teams (Skills & Behaviors)
 - Inclusive of diverse thinking styles
 - Synced directly to Whole-Brain process
- Whole-Brain Information (Tools)
 - Inclusive shaped for use by diverse users
 - Synced directly to Whole-Brain process
- Whole-Brain Technology (Tools)
 - Geared for pattern creation & pattern optimization
 - Synced directly to Whole-Brain process
- Whole-Brain Environment (Tools)
 - Geared for pattern creation & pattern optimization
 - Synced directly to Whole-Brain process

Sometimes we might combine Technology with Environment and distinguish between digital and physical environments. In other words, this is an innovationscape that we can paint a picture of in several different ways.

In our world close discussions with organizational leaders start early on and visual models are extremely useful to have on hand long before we start to do any intervention or building work. We also use the Whole-Brain Innovation Ecology model or framework to help organize analysis of existing conditions. This is often useful in helping to explain what exists and what is missing.

For example its great to have innovation as a value but where and what are the behaviors connected to that value? Many organizations have spent a zillion dollars on IT without asking important innovation related questions such as how much of that technology is geared for pattern creating and how much for pattern optimization? Without realization, much of what is typically built is geared for pattern optimization. Using the simple visual Innovation Ecology model we can quickly explain what we are looking at and why.

If I had to choose one or two things that are most often missing in organizational settings in terms of innovation enabling it would be this: From the innovation strategy perspective it would be a clear, human-centered definition of what innovation is. From the technology perspective it would be pattern creation technologies. From the environments perspective it would be pattern creation environments and even the awareness that environments play an important role in innovation enabling.

From the team perspective it would be insights into who the team is in terms of the innovation preferences that they are bringing to the table. From a process perspective it would be what we call the universal and the behavior dimensions. Most of organizations that we work with already have a process of some kind that they refer to as a delivery process. They often lack the universal understanding of what the process is from a problem solving perspective. They might think they have a process for delivering user experiences, web sites or products for example. When their industry changes they are caught flat-footed as they only thought of their process in terms of what they once delivered. Without the universal understanding piece they lack adaptability to other challenge types and conditions. Adaptability of process is a key ingredient for organizations facing a continuously changing marketplace.

Although most large organizations already have some kind of delivery process they are often missing the behavioral piece, which means employees are having difficulty operating effectively at the table top level in the context of cross-disciplinary working as their education, however advanced, did not prepare them for such a context. Lets be honest, they did not learn these skills because our universities are miles behind in terms of adapting to this work context.

In a global economy we do recognize that in many organizations knowledge workers are geographically dispersed and extremely diverse. We see network technologies continuing to change the way humans are interacting and working today. We also recognize however that even with all the technology around, a lot of what gets done everyday in the imperfect world of business is done rapidly, informally and on the fly in relatively low technology physical environments. We therefore believe it is important to equip our clients with the skills that are applicable wherever they might be, on an airplane, in a café, in addition to the electronically enhanced boardroom. We seek to equip them to operate effectively in both the best case and the worse case environment scenarios.

I would like to turn us now to a next question that in several ways connects technology, behavior and wicked problems. This terrain is a little difficult to get to but let me give it a try.

According to mainstream media we are immersed in what is being described as “The Age of Conversation” and or “The Age of Self Publishing.”

With the continuing adoption and spread of network technology we are seeing widespread use of blogs, news group lists, wikies, in addition to multi-purpose social networking sites such as Facebook. A lot of those platforms are located in the public realm and external to corporate organizations. In addition there are numerous internally directed technologies the purpose of which is often described as “enhancing meeting dialogue and communications.”

While the new business press in the United States seems to be more interested in promoting technology than thoughtful consideration of its consequences for organizations a next generation of innovation researchers and thinkers (our readers) are interested in the many questions around technology and its impact today.

It is no secret that intertwined with blogs, news group lists, and other related technologies are digital age behavioral interaction traditions. These include Flaming, Flame Wars, Flame Reviews, Holy Wars, Pie Fights, Thought Policing, etc.

See Wikipedia http://en.wikipedia.org/wiki/Flame_war

Such dynamics are by now not only deeply engrained in several generations of technology users but held in high regard in many circles. Numerous sites offer the fine points of how to master these dynamics and the behaviors that go along with them for anyone who might not yet know. The basic smarts of the digital age have long included mastery of such hostility dynamics.

Anyone familiar with these dynamics will know that there are numerous types or levels of severity to hostility dialogue, from sarcastic joking all the way to physical threats as per the Kathy Sierra story that appeared in March 2007.

See Wikipedia http://en.wikipedia.org/wiki/Kathy_Sierra

A second interconnected dialogue type pervasive on line is debate. On some lists flaming is prohibited and more civil debate encouraged. Debate Dialogue remains wildly popular in academic lists where participants seek to add value by pointing out what is wrong with the other person’s view. On such lists there is often a heavy predisposition towards judgment and no distinction being made between judgment and ideation.

Also pervasive in on-line discussion lists is dialogue that we call unorchestrated. This dialogue seems to contain numerous and random dialogue types being mixed together often without the participants being conscious of it.

Occurring in parallel to the preponderance of these dialogue types is the assumption that technology knowledge (Flaming Wars knowledge) and innovation knowledge are one in the same.

All of this is occurring in parallel to the rising complexity of so-called wicked challenges facing the planet as we discussed earlier. In the marketplace and certainly in academic circles we see a lot of confusion around such issues.

I am curious to hear what you see going on there from an innovation perspective. This connects back to the question of whether or not creative problem finding/solving dialogue, innovation dialogue, transformation dialogue, whatever we want to call that, is the same as or different from other forms of dialogue and if so, how is it different? For organizations today, the fact is that many employees are already bringing these deeply entrenched dynamics into their work environments.

This is one of the unstudied complexities that many organizational leaders now face. For organizations seeking to become more innovative should the dynamics of the blogosphere become the underlying interaction and communication dynamic in the culture of the organization? These are difficult questions but hey that's why we are here.:-)

Min Basadur: Your question covers a lot of ground but seems to me to have a basic theme which we could call "environment". So I am going to target my thoughts toward what I would call "the cognitive environment". The cognitive skills I have talked about earlier in this conversation are the keys to a healthy cognitive environment. They drive behaviors that help provide an innovative dialogue and which are completely opposite to the "flaming" (etc.) dialoguing behaviors that you outline above. When you devote your dialogue time arguing or posturing to proving you are "right" or more competent than other people, rather than progressing toward resolving a mutual problem worth solving, you have automatically taken your eye off the ball.

Complex problem solving requires the best thinking possible, free of "noise" and distractions, and with full focus on the work at hand. When people are not truly completely committed to conquering the same problem but are instead attending to achieving their own personal wants and desires, (sometimes referred to as "hidden agendas") this focus is not only sub-optimal, but worse, badly weakened. (Picture a tug of war team with some individuals pulling AGAINST the team, and some pulling hard only when others are noticing).

Even with full commitment and focus, something else is needed for a group of individuals to think well together. As I have described previously, we call this a common language of innovative thinking, including a cognitive process and skills and tools to make the process work and allow diverse individuals synchronize their thinking. It's a way of harnessing the power of "cognitive diversity". We have had experience with some organizations who hire top people from the top schools and put them into jobs demanding high levels of motivation and highly visible results-oriented "cowboy" behavior. Often such members repeat the competitive behaviors that served them well in school (as they fought their way to the top of the class and won branding as "high achievers").

The only way they seem to now know how to distinguish themselves in their new workplace environment is to compete with their colleagues and try to appear smarter.

This unfortunately can lead to competitive, derogatory behavior, where the name of the game is to find flaws in the other person's thinking as quickly as possible and advance your own point of view as being better. This leads in turn to endless debate, win-lose dialogue, and an incredibly inefficient use of precious time. In a world of complexity where cross-discipline teamwork is so necessary, this is a recipe for disaster. In some high-energy new corporations flush with early success, this lack of cross group collaboration cognitive skill is fast emerging as a potential Achilles heel. Members of such organizations privately tell us that they are dismayed with living with environments they experience as very evaluative and very censoring. They yearn for a better way to interact, a more "holistic approach" to innovative work, requiring a combination of quality, collaboration and speed. They report that their organization may view itself as collaborative but they themselves as lower level members think it is not at all collaborative at the cross-group, face-to-face level. In fact, most collaboration is done only electronically, i.e. via email or instant messenger.

We find that the idea of improving "table top" collaborative skills resonates with the members of these organizations. They understand the need to spread skills in working together collaboratively face to face.

You only have to watch today's television shows such as "crossfire," "survivor", and "the apprentice" to realize how ingrained derogatory debate is glorified and substituted for civil discussion. The political process that combines spin, propaganda, and smear, teaches us that the only way to interact with others on issues is by conflict and win-lose fighting.

As people on organizations become increasingly frustrated with such behavior, I predict that there will be a growing impetus for a methods and processes that would encourage collaborative win-win solutions. Our research has supported the idea that such win-win collaboration requires innovative thinking.

Especially important are a common process, skills and tools emphasizing "out of the box" thinking especially in problem definition as the key to making a perceived "fixed pie" larger, moving beyond the shackles of zero-sum, win-lose, compromise thinking. If a problem can be conceptualized from a new angle in such a way that each party believes its resolution would provide a high level of satisfaction, then all the parties will be more likely to work together collaboratively toward a solution. We have published research in which even in union management bargaining when a commonly accepted cognitive system of creative process, skills and tools was deliberately applied, success was achieved in building trust and developing expanded understanding and new solutions.

At the risk of repeating myself and going over the same old ground, I will conclude with some things from our previous dialogues. I have stressed three critical cognitive skills as fundamental for complex problem solving. These are (1) active divergence, (2) active convergence, and (3) the ability to separate these first two, that is, the deliberate deferral of judgment. The ability to defer judgment is the gateway to the creative, collaborative development of multiple points of view and new and different perspectives. If analysis and evaluation of fledgling thoughts and different points of view are deferred skillfully, multi constituency participation and problem defining and solving is made safer.

Under such conditions, team members are less fearful advancing fledgling points of view and less likely to feel they must be constantly “on guard” to protect parochial interests. Breakthroughs are more likely to occur under this process which encourages different points of view and relaxed supportiveness.

Skill in deferring judgment permits vital emphasis upon the early stages of the creative process. The essence of the generating stage is to surface new problems and information as positive opportunities for improvement and innovation. In Japan, this is commonly called “looking for the golden eggs.” This orientation permits safe, open-minded, exploratory fact-finding to occur. The essence of the next, stage, conceptualization, is to raise insightful challenges and create a common and fresh understanding of the problem as a whole. Creativity in problem defining, looking at the problem from a new angle, often provides the road to a consensus breakthrough. Too often we rush into arguing about alternative solutions without determining an agreed good problem statement. Many unwarranted assumptions make new cognitive skills including executing a commonly understood creative process critical. For example we assume the problem definition is clear to all parties involved and that it is the same as our own perception.

One particularly important cognitive skill is to frame (and lead others to frame) problem statements simply, clearly and optimistically beginning with the words “How might we...?” People tend to dislike problems as being “negative,” but they tend to regard opportunities and challenges more positively. Transforming “problems” positively using the “How might we” tool as a powerful motivating and collaborative phrase to replace the negative “We can’t because...” attitude frequently heard in organizations is a vital cognitive skill to be mastered especially when inter-member derogatory competition is the only approach known.

Research strongly supports our practical experience that these cognitive skills and tools for complex problem solving can be learned, nurtured, and managed within organizations through experiential, practical on- job-the training which affords participants opportunities for discovering that such skills and tools do work. We have published field research which measured several cognitive skill improvements after training including: more likely to pause to try new, unusual approaches; more open-mindedness to new ideas; better deferral of premature critical judgment; less time spent in negative evaluation during idea generation; increased quantity and quality of problems found; more different ways to define a problem developed; less likely to jump to conclusions about the nature of a problem; better skilled in evaluating ideas.

We have also published research showing that such training effects were especially sustainable when participants were trained in intact teams. Top management can also be trained successfully to apply these cognitive skills in their work and as members of executive teams. Furthermore, they can become proficient in modeling and encouraging the use of these new skills throughout the organization. The trick is to induce them to become aware of the significant opportunity that building creative collaboration cognitive skills provides. I hope these thoughts are helpful.

Jeff Conklin: I completely agree with Min that we need to get better at creative dialogue, in which judgment is deferred. As Laurence J. Peter said, “Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them.”

I agree with GK that there is an alarming pattern away from dialogue and deliberation in politics and the mainstream media, and the glorification of debate and right/wrong interaction styles in the blogosphere. But I suspect that these very patterns are waking up more and more people to the ultimately self-destructive (and ineffective) nature of dualistic thinking, and are highlighting the need for creative and more inclusive modes of thought and communication.

I am actually excited about some of the patterns and possibilities I see emerging on the Internet in the “Web 2.0” rubric. Social tagging and bookmarking (e.g. such sites as Flickr and del.icio.us) illustrate how “folksonomies” reflect the information structures that people actually use (instead of the ones created for them). Similarly, the process of the social construction of knowledge, exemplified by Wikipedia and being duplicated by many other wiki-like sites, illustrates how high-quality knowledge is being authored and shared for the personal satisfaction of participating in and contributing to the wider Internet community. And there are group-messaging tools and sites that help filter the “fire hose” of information so that it is easier to stay tuned in without being overwhelmed.

In his article, “Enterprise 2.0: The Dawn of Emergent Collaboration” (C1), Harvard Business School professor Andrew McAfee suggests that such Web 2.0 tools have the ability, if applied appropriately within organizations, to transform “knowledge management” into a set of technologies that supports the way knowledge workers actually think and communicate.

It’s exciting to see that with the right framework and tools ordinary people with no particular training or skills can get excited about exploring complex problems and creating knowledge together.

Indeed, as an irrepressible apostle of Horst Rittel’s work, I am currently exploring the creation of web-based discussion spaces in which organizations and communities can engage in thoughtful, creative discourse using the IBIS structure of questions, ideas, pros & cons. As I see it there is an exciting possibility that such deliberation spaces could support and encourage the emergence of high-quality, radically-inclusive dialogue and deliberation about the most important problems facing our communities, organizations, and governments, dialogue that is focused on the issues, not on personalities or hidden agendas.

6

GK VanPatter: Whatever terminologies each of us might choose to use, Web 2.0 etc. I think we would all agree that technology continues to hold enormous promise. On the other hand the present facts that exist where the rubber meets the road are equally interesting to consider.

It is no secret that technology continues to be offered up as the quick and effortless fix for innovation, the ultimate workaround with no change of behavior required.

The picture that Web 2.0 is going to enable and repair everything remains an attractive one for many. The fact remains, however, whether everyone likes it or not, that some of the most savvy technology companies on the planet, (some even create groupware), continue to have serious innovation challenges in their organizations.

I do think that today savvy organizational leaders who have been around for more than one cycle are figuring out that more than technology is going to be required to overcome the many complex challenges facing their organizations. Having spent a zillion dollars on IT in the last ten years they have a knowledgeable perspective that was not there at the outset of the dotcom era. Among other things organizational leaders are much less vulnerable to technology hype. Lets face it, for many large complex organizations there is heavy lifting to do and no amount of workaround technologies will be enough.

In the months and years to come its going to be interesting to move beyond the present fuzzy picture and start to see new research emerging regarding, among other things, how the transfer of on-line behaviors are impacting organizations and their cultures.

Lets switch gears and get reconnected with a few of the earlier questions outlined. Lets try abductive, deductive, and reductive thinking on for size. You are both veterans who have been in the consulting business for numerous business cycles working with large organizations. I am sure you have both seen the popularity of numerous terminologies come and go. Was it news to you when some of the business schools leaders seeking to reinvent themselves announced recently, to much fanfare in the new business press, that they finally figured out that they need to start teaching what they went on to describe as "inductive thinking"?

"[Roger] Martin asserts that traditional companies "reward two types of logic: inductive (proving that something actually operates) and deductive (proving that something must be)." Designers combine inductive and deductive reasoning to create a fresh approach -- abductive thinking -- which Martin defines as "suggesting that something may be and reaching out to explore it." Instead of acting on what's certain, designers bet on what's probable. Companies such as Apple act like design shops by saying, "If everything must be proven, we'll never make the likes of an iPod."

Martin believes that business schools are also out of position for the emerging design-based economy. In his view, even the degree -- a master's of business administration -- is problematic. "We're telling students that the big bucks are made by administering linear improvements -- getting better and better at doing essentially the same thing," he says. "But the real challenge lies in getting better and better at a different thing: devising clever solutions to wickedly difficult problems." (VP2)

Whether we call this strategic creativity, creative problem finding/solving, innovation, opportunity framing, strategic design thinking, or abductive thinking was the notion that business leaders should learn such skills big news in your part of the universe? Last Question: From your perspective, was there anything new there?

Jeff Conklin: I've been hearing the term "abduction" and "abductive reasoning" for a couple of years and I confess I don't understand the range of uses. A quick scan of the Wikipedia entry for "abductive reasoning"

(http://en.wikipedia.org/wiki/Abductive_reasoning) reveals that “abduction allows the precondition *a* of ‘*a* entails *b*’ to be inferred from the consequence *b*,” which doesn’t take you all the way to the definition Martin offers: “*suggesting that something may be and reaching out to explore it*” (but my grasp of logic and philosophy has never been my strong point!).

In his writings Horst Rittel implies that “*deontic logic*” is core to design, since the fundamental questions of design thinking are the deontic question, “What should we do?” (i.e. “What should we do to address problem X?”) plus the instrumental question, “How should we do Y?”

The world of organizational theory and organizational development, it seems to me, is engaged in a paradigmatic struggle between the traditional values of reliability and predictability (as inculcated in us all since the Renaissance by the values of Science, the dominant institution of validity in our culture) and the more post-modern values of usefulness, aesthetics, and social acceptance (as reflected by the emerging discipline of design). I view this struggle as the tension between the faltering ‘age of science’ and the emerging ‘age of design’ (see <http://www.cognexus.org/ageofdesign.pdf>). In many organizations senior management climbed up out of the ranks of engineers, and has a tendency to cling tightly to a mechanistic and linear philosophy about how to run a successful organization, despite the evidence of the limitations of command and control.

Trends like the emphasis on innovation skills and agility are useful attempts to find a language and conceptual framework that might facilitate better shared understanding among all the different modes of thinking and working that constitute our modern Tower of Babel: science vs. design, deductive/inductive vs. abductive reasoning, marketing vs. engineering, left brain vs right brain, and so on. Polarizing over the differences is easy – being effective in the nuanced complexity of the middle ground is where our work lies.

GK: Thank you very much for the opportunity to engage in this dialogue with you and Min. I have learned tremendously from this exchange, and have really enjoyed our ‘virtual café’ for reflecting critically on the topics that I am most passionate about!

Min Basadur: I welcome Roger Martin and Rotman awakening to the potential and power of applied creativity. I view the statement by Martin that you made reference to as part of a genuine effort being made by a business school leader to become more relevant. Is there anything new there? Not really. I know that some business school leaders seem to think that “The Creative Age” (B4) just arrived last year but from our perspective that is more about creative marketing than creative reality. That is more about some business schools and their leaders arriving in the creative age than it is about the arrival of the creative age. Since our international consultancy has been actively engaged in the realm of applied creativity, working with organizational leaders on transformation related challenges for many years we would obviously not subscribe to the suggestion that the creative age arrived in 2006!

Some times those arriving on the scene remind us of overly eager graduate students who think they have invented a new field of knowledge when they encounter an area of expertise that is unfamiliar to them. This overly eager dynamic is something that occurs in many fields of knowledge so seeing it in the context of applied creativity is not so unusual. In our work we are more interested in substance than spin so we try to keep

this kind of stuff in perspective. As we have previously discussed in Part 1 of this conversation, the applied creativity field of knowledge as it applies to integrative thinking, organizational innovation and transformation has a long history and many thought leader practitioners. My colleagues and I welcome all who are just discovering the field and authentically seek to make connections to it.

Historically some fields have been quick to catch on to the need and value of applied creativity knowledge, skills and tools, while other fields have been extremely slow to adapt. Unfortunately business schools have not been among the fields that have adapted rapidly in spite of an urgent need to do so and in spite of the fact that some of us have been making this case for more than two decades. (B5,6,7,8,9,10,11,12)

Real world business organizations have always been more receptive to the power of applied creativity than the business schools. Over the course of my career I have been one of the relative few who have been fortunate enough to have their feet in business and academia at the same time. This has helped our long standing work in applied creativity stay grounded in the real world of organizational challenges and allowed us to make significant advances in the field outside of the business school context while continuing to advocate the adoption of applied creativity skills by business schools. Being an advocate of applied creativity is being an advocate of relevancy and in the context of business schools this is something that has traditionally been ignored but times are changing.

In the academic context it has always been an uphill struggle to inject applied creativity into business schools on two counts: First, getting applied creativity courses into the tightly packed business school curriculum is tough. Historically they have placed more value on other things. Second, getting business school faculty and administration to participate in moving toward their own organizational transformation to adaptability is much tougher. I can assure you that you have never seen a worse display of problem solving ineptitude than to observe an interdepartmental group of business school professors in a meeting on a new organizational initiative requiring teamwork and change!

As per my remarks above, I believe Martin's comments can best be understood in the context of the broader picture or driver that many business schools are wrestling with and that is relevancy. Increasing attention is being given in academic circles to the lack of impact business schools' "organizational scholarship" has on actual practice. There is now growing acceptance that a huge gap exists between real world management work and the research being published by management scholars, especially in the elite management journals. Several respected management scholars have described it as a "collective failure to matter." As you might know, the theme of the 2008 Academy of Management Conference is "The Questions We Ask." Their focus is on examining the research questions scholars ask with the hope of improving relevancy and real world impact of their research.

Part of the difficulty is the deeply entrenched reward structures found in many business schools. Most operate a strict hierarchy and professors are considered successful based on one overriding criterion: research publications. Professors who publish academic research in top-tier journals are rewarded handsomely while overt attention to practice is scorned. This entrenched reward system continues to have significant impact on the relevancy of the thinking coming out of many business schools.

So here is Roger Martin, a business school leader, telling organizational leaders that they need to do things differently, to embrace and reward efforts to do things in new ways in order to remain relevant, and yet business schools continue to resist change and to reward irrelevancy. Overcoming this kind of institutionalized hypocrisy continues to be a challenge for business schools and business school leaders. Martin is correct in his views that business schools are disconnected from the innovation-based or design-based economy, but that is hardly earth shattering news. I think this can best be said to be just another example of business schools being out of step with the real world of management for so many years that they are now playing catch up.

As late adopters/adapters they seem to be very early in their learning and development cycle regarding how to apply innovation, applied creativity, design, knowledge in the context of organizations and wicked problems.

Evidently it took the commercial success of the iPod to finally convince business school leaders of the need (financial advantages) of teaching more than efficiency. If Martin wants to position that late awakening as a creative age arriving that is his choice to make. As far as I can tell the transformation occurring around Rotman is within the realm of business education rather than within the field of applied creativity, integrative thinking, organizational innovation or organizational transformation. This is an important distinction that seems to get blurred in all of the spin.

The good news here seems to be that academics who have been mired inside of business schools teaching logical, analytical thinking exclusively for decades may be finally becoming aware that there is more to successful management in the 21st century. As you identified in creating this next design leadership initiative, there is a strategic shift underway from “management” to “leadership.”

We already know that top managers have risen above linear thinking and have learned on their own (no thanks to their MBA professors) that driving change is the one skill above all that will distinguish the real leaders from the followers in management. (B13). Driving change is one of the most complex and cognitive challenges for any manager, any business leader. It is the secret to organizational adaptability, a concept developed by Dr. Paul Mott from his landmark organizational effectiveness research published in 1972 (B14). Thirty years later most organizations and managers today still struggle with adaptability. Underneath a lot of the terms being thrown around today such as agility, innovation, abductive thinking, design thinking is really the notion of proactive adaptability. In a world of continuous change it is the big challenge that reaches far beyond new product or service creation for most organizations.

Since the business schools have been focused for so long on efficiency it appears that they have not yet codified how to teach adaptability skills in a meaningful, experiential way but with the help of the iPod success story they are finally onto the notion that this is important. We already know there is a lot of interest on the part of business leaders in learning adaptability skills because that is part of what we have been teaching in the learning programs within our consultancy for many years. We work with large organizations in many countries and in every imaginable industry. A common interest is proactive adaptability.

I did notice that the definition of inductive logic used by Martin is different from my concept of it and I suspect from those of many others. Martin defines abductive thinking as "suggesting that something may be and reaching out to explore it." He states that "instead of acting on what's certain, designers bet on what's probable." He further states that companies such as Apple "act like design shops by saying, If everything must be proven, we'll never make the likes of an iPod." and that "the real challenge lies in getting better and better at something new: devising clever solutions to wickedly difficult problems instead of "telling students that the big bucks are made by administering linear improvements -- getting better and better at doing essentially the same thing".

In my experience, induction usually implies "thinking up"...designing/creating/hypothesizing/imagining new possibilities. Deduction implies "thinking down," that is beginning with a given set of information created by someone else and working toward a single best answer or decision through analytical thinking. Business education has virtually totally focused on the latter. Students are taught how to optimize everything. They never have to deal with what we call "the fuzzy front end." (B15,16).

Others (e.g. William M.K. Trochim, 2006) (B17) refer to two broad methods of reasoning as the inductive and deductive approaches as follows:

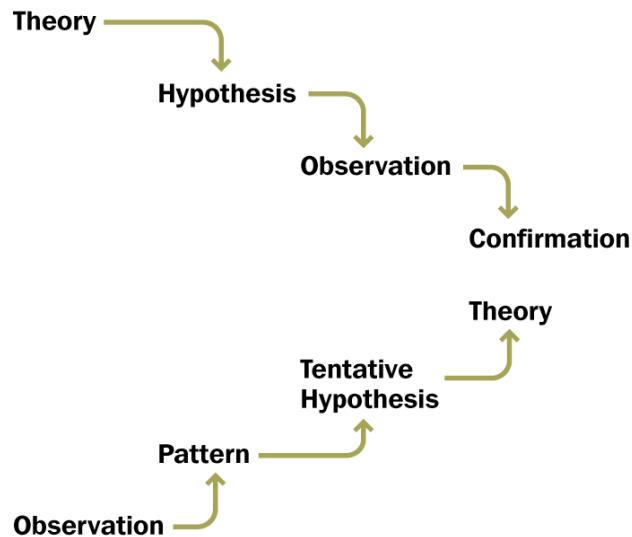
Inductive reasoning works by moving UP from specific observations to broader generalizations and theories. This is sometimes called a "bottom UP" approach. In inductive reasoning, we begin with specific observations and measures, begin to detect patterns and regularities, formulate or imagine some tentative hypotheses that we can explore, and finally end up developing some general conclusions or theories.

Deductive reasoning works the other way, moving DOWN from the more general to the more specific. Sometimes this is called a "top-down" approach. We might begin with thinking up a theory about our topic of interest. We then narrow that DOWN down into more specific hypotheses that we can test. We narrow DOWN even further when we collect observations to address the hypotheses. This ultimately leads us to be able to test or analyze the hypotheses with specific data -- a confirmation (or not) of our original theories.

Trochim continues to say that these two methods of reasoning have a very different "feel" to them when you're conducting research. Inductive reasoning, by its very nature, is more open-ended and exploratory. Deductive reasoning is narrower in nature and is concerned with testing or confirming. Even though a particular study may look like it's purely deductive (e.g., an experiment designed to test the hypothesized effects of some treatment on some outcome), most social research involves both inductive and deductive reasoning processes at some time in the project.

In fact, it doesn't take a rocket scientist to see that we could combine the two kinds of reasoning into a single circular process that continually cycles from creating new theories down to observations and back up again to new theories (see figure below by Trochim).

Even in the most constrained experiment, the researchers may observe patterns in the data that lead them to develop new theories.



Within the realm of applied creativity it is well known that what effective designers do is to combine inductive and deductive thinking to innovate. Innovating seems to be what Martin is seeking to restate as “abductive thinking“. This appears to be rebranding semantics more than substance.

This tension between thinking differences has been around for numerous generations of human innovation history. It is a tension that has been packaged up in different ways by different interest groups but the innovation fundamentals remain essentially the same. The point is, a huge amount of work has already been done in the field around these issues that are not particularly new. There really is no need to go back and reinvent that wheel.

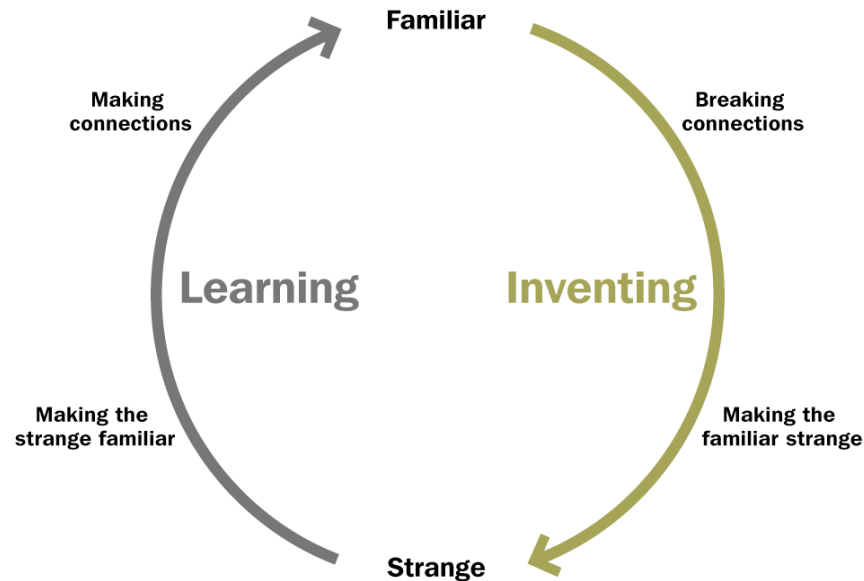
As applied creativity practioners we became interested many years ago in orchestrating those thinking tensions rather than using them to polarize differences. Polarizing differences is a rather crude, old hat approach. You don't get to integrative thinking through polarization. It's as simple as that.

Synergizing, integrating and orchestrating is at the heart of everything we do and we are considered to be pioneers in this realm so for us, regardless of how it is being repackaged, this is not a new subject. Synergizing thinking is the focus of our long-standing work.

Anyone knowledgeable about innovation history will know that there are several important landmarks that were constructed early in the modern “Creativity Age” that relate to this tension between thinking differences.

Some knowledgeable readers of this journal will be aware of these landmarks I'm sure.

As I mentioned earlier in this conversation, one such landmark is what WJJ Gordon framed up, away back in 1956. Gordon depicted a continuous cycle of what he called “making the familiar strange” (inventing) then “making the strange familiar” (learning) (B1,2,3). The figure below provides a visual representation:



Another important early landmark in the realm of applied creativity was J.P. Guilford’s psychological research establishing the Structure Of Intellect (SOI) model in 1967 (B11). Through rigorous factor analytic methods, Guilford discovered the mental operation he called “divergent production” and identified four others, including the opposing operation of “evaluation.” He also identified two opposing methods humans use to build their understanding during the creative process (cognition and convergent production).

In my own early applied creativity thinking I made connections across these, and other important landmarks. This all boils down to finally understanding innovation as a (circular) process. As practitioners of applied creativity this is what we have called synergizing imaginative thinking with analytical thinking for at least 20 years. Today we are long past the hypothesis stage. In our applied creativity practice we long ago moved beyond hypothesis to invent, design and build real tools that connect into and make the most of these differences and this diversity. Those tools and methods have been operational for some time. (B12,13,14). These are some of the tools that we use in our work with diverse organizations and we are continuously adding to that toolbox.

For a brief view into one such tool see:
See Deeper! Think Smarter!
<http://nextd.org/InnovationProfile/index.html>

Today we have an entire learning system developed and this is what we teach in the context of our organizational transformation practice in which integrative thinking across numerous disciplines plays a central role as does understanding the thinking preferences of the team in a non-polarizing way.

This knowledge has been codified to the point where participants in our learning programs learn the skills, not in a lecture format, not by reading case studies, but rather in a more meaningful experiential way. We have been teaching not only strategic co-creation but also co-implementation for many years. (B15,16).

In our world, the innovation process is one of continuously cycling through creating new patterns (breaking old connections) and optimizing/implementing new patterns (making new connections). In recent years we have also put effort into framing how this process may be connected to other fields such as knowledge management, organizational learning, etc. (B17).

We are delighted to see graduate business schools increasingly seeking to help their students become masters of integrative thinking, business design and organizational transformation. Simultaneously the multidimensional field of design is itself being strategically transformed so it is an interesting picture and a fascinating time. It is a wonderful time to be in the applied creativity business and I remain excited by all the possibilities.

Always future focused we are currently engaged in numerous initiatives that deliberately combine several fields of knowledge, some of them in collaboration with NextD, such as the Complexity Navigation Program that was launched recently as an executive skill-building curriculum.

In that program Strategic Co-Creation, Cross-Disciplinary Team Dynamics, Design Research, and Visual Sense-Making are combined to build basic skills in Human-Centered Innovation. Complexity Navigators are process, not content focused and engage in many kinds of wicked challenges, not just those connected to products or services. We have been having a lot of fun designing and teaching these combined sessions, working out all the connections between these exciting and continually evolving areas of knowledge. Geared for change making leaders engaged in a world of continuous change, these are highly sought after skills today.

Also in collaboration with NextD we were recently invited to join the advisory design team for NextAcademy, a new Cross-Disciplinary Innovation Leadership School with its first location to be in Spain. NextAcademy has the ambitious goal of combining what has been defined as NextBusiness, NextDesign and NextTechnology so that is quite an exciting experiment for us to be involved in. At its foundation are many of the adaptable innovation skills that we are teaching in the Complexity Navigation program. I love Spain and we are having a lot of fun participating in the NextAcademy initiative.

Across many graduate and post graduate schools we continue to see rising interest from academic leaders in learning more about how to adapt their programs to the ways of cross-disciplinary innovation work.

Without all the media fanfare we work with several academic leaders on what it takes to bring and embed in their programs applied creativity cognitive skills, processes, and tools based on rigorous field research as well as fundamental cognitive and behavioral psychology. This work we do through our growing Academic Collaborator Network that remains open to academic leaders in all disciplines who authentically seek to embark on a cross-disciplinary program integration journey.

To us this remains exciting and important work in that it contributes to preparing a new generation to grapple with the wicked problems that they will face in the complex world that they will inherit and be responsible for. This is meaningful, future focused work and that's what its all about for us.

Thanks GK for inviting me to participate in this ReThinking Wicked Problems dialogue with you and Jeff. I have enjoyed it and have learned new perspectives into this subject that remains a great passion for me.

GK VanPatter: I agree with Jeff that operating beyond the polarization of differences is what we need more of today and I agree with Min that integrative thinking cannot be reached through polarization.

Jeff and I might disagree on whether design thinking today is about "What should we do to address problem X?" plus the instrumental question, "How should we do Y?"

While the starting point in Design 1.0 and 2.0 was often a challenge framed by others the Design 3.0 (VP3) activity space presents a radically different paradigm in that it encompasses participation and leadership on the fuzzy front end, long before challenges are framed. If Jeff and I have different perspectives on this point that's OK. This will give us something more to chat about when the three of us toast in celebration of the completion of this long conversation!

Thanks Min and Jeff for such insightful contributions. It has been great to share views on this complicated subject and our readers will get a lot out of this I'm sure. At more than twenty five thousand words there are many insights for readers to reflect upon in this two part conversation! I believe we have made a genuine attempt to open a window between several universes here. While it is unlikely that Buffalo-Berkley Divide (VP1) will be eradicated through this conversation I feel good about us contributing to bridging across that divide.

As a courtesy to our guests we typically give them the last words but since this is the last conversation in this series I am going to depart from that protocol and make a few closing comments. I noticed a few things in our dialogue that I wanted to connect into as we close the door on this series and open a new door to whatever NextD turns into next.

Since we are, at NextD, interested in the terrain beyond differencing the one thing that struck me most about our dialogue in this Part 2 segment was the common ground between the three of us, in spite of our different backgrounds and approaches. While we do not all agree on every detail, and while I can often see the innovation school of thought orientations coming through it seems clear that the three of us direct our energies in everyday practice at deliberately constructing inclusion and integrative thinking across many knowledge fields and disciplines.

While we have different terminologies for that activity terrain as well as quite different methods and tools to engage there we seem to agree that this where the most need is today, where we can add the most value and where the most meaningful terrain for engagement can be found.

Some of Jeff's terms included:

1. widely-inclusive problem solving approaches
2. shared understanding
3. working effectively across disciplinary boundaries
4. patience with other people's learning styles
5. the importance of the "container" in which cross-functional work is trying to happen
6. we need to get better at creative dialogue, in which judgment is deferred
7. the ultimately self-destructive (and ineffective) nature of dualistic thinking
8. the need for creative and more inclusive modes of thought and communication
9. increase the need for collaborative literacy
10. the nuanced complexity of the middle ground

Some of Min's terms included:

1. commitment to including the full range of thinking and learning styles
2. inter-disciplinary teams
3. working together simultaneously
4. keys to a healthy cognitive environment
5. allow diverse individuals to synchronize their thinking
6. collaborative win-win solutions
7. synergizing imaginative thinking with analytical thinking
8. combine the two kinds of reasoning into a single circular process
9. a common language of innovative thinking
10. building creative collaboration cognitive skills

Some of my terms included:

1. whole-brain innovation ecology
2. whole-brain (Inclusive) innovation strategy
3. maximizing the brainpower in the organization
4. whole-brain process inclusive of pattern creation & pattern optimization
5. whole-brain teams inclusive of diverse thinking styles
6. cross-disciplinary innovation acceleration
7. shaped for use by diverse users
8. innovation sense-making
9. transformation enabling
10. cross-disciplinary culture

It seems to me that diversity of thinking and inclusion is a suitable territory to land this last conversation as this connects to the very beginning of our NextD journey. It is also the dynamic that underlies most of the conversations that we have had over the past 6 years. This is something that we have modeled more than written formally about and that is the emerging role of the Transformation Enabler, the Co-Creation Strategist, the Inclusive Innovation Architect, the Participatory Design Enabler, the Complexity Navigation Enabler, the NextDesign Leader or whatever you choose to call that role, that person (VP4).

With a new set of transformation skills encompassing what we call super sense making and change making tools and skills it is an emerging and relatively new role that is itself in motion.

It is a role that is focused, not on polarization of differences but rather deliberately creating the conditions that enable integrative thinking, respect for other fields of knowledge and authentic engagement with others with the goal of addressing the many complex challenges and opportunities facing us.

Part of being in that role is to take on the task of being responsible for creating what was described in this conversation by Jeff as the container, by Min as the cognitive environment and by me as the innovation ecology. Creating a change making environment based on cognitive diversity, respect for others and authentic engagement by all is one of the most difficult things to do in organizations today but it is also one of the most exciting, rewarding and meaningful if this is your passion. If this is what you are genetically designed to do, part of NextD's message has always been that this in fact is a role, a mission. I know Min would refer to it as a way of life.

As some NextD conversations demonstrate it is often a difficult role to play...:-)
Expressing concern for whole brain dynamics is not something everyone is familiar with in business today. What Inclusive Innovation Architects do can be misunderstood if the underlying intentions are not explained adequately.

In making conference presentations in many countries we are often asked how do we suggest getting a design-oriented culture started in large organizations. Our reply is always to focus, not on force-fitting design or any other domain of knowledge but rather on taking hold of and responsibility for creating an inclusive whole brain environment. In doing so you are helping your company maximize its brainpower and you are taking the responsibility to create inclusion of the whole, which includes those who choose to navigate the world with design thinking.

This is much different then telling everyone they need design. We believe it is a higher order calling that not just the designers in the room appreciate. The only people in the room who will be threatened by that approach are those who have separate and often unexpressed power agendas that are not in sync with the goal of respecting each other and maximizing brainpower. These forces exist in the world. It is these forces that you have to be prepared to grapple with if you seek this enabling whole brain innovation role. Get Ready!

Last but not least I wanted to mention the interconnected notion of community as it underlies this conversation as well as the entire NextD initiative. In life one can think of oneself as an individual, as part of a team, a company, a community, a community of communities, a country, a planet etc.

While some might have found NextD puzzling from time to time, part of that is likely because we have always been interested in and engaged with community challenges, not individual or even practice challenges. The truth is in everyday life we take this as part of our responsibility as idealistic or odd as that may sound to some. This likely has a lot to do with the cultures that Elizabeth and I came from (Spain and Canada). We are well aware that not everyone thinks this way.

I was very interested to see concern in this ReThinking Wicked Problems conversation expressed by the three of us for more than individual interests. The concern for community expressed here will hopefully inspire others.

Thanks again to all of our readers for their support and interest. That's a wrap!

See you somehow, somewhere, in the next chapter of NextD.

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Notes To Readers:

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