

A Primordial Pedagogy Caves, Campfires and Watering Holes at the Mayo Clinic/Plexus Summit

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We broke many of the conventional rules of conferences and professional learning at this confab in Minnesota. Our approach seemed to create powerful learning, novel directions, and deeper relationships among participants. In many ways, complexity science, the content matter for our confab, gave us courage to break with convention (the convention-of-conventions so to speak). If you find yourself on the “BIG conference planning committee,” this story may help you through.

Setting: The Minnesota Nice Tradition

As I walked into the Mayo Clinic the day before the 1st Plexus International Summit, “Complexity-In-Practice,” our hosts started to tell the story of how the world-famous clinic was started. I immediately felt the presence of generations of spiritual and clinical leaders that blazed a path leading up to our humble explorations. Like the founding Mayo Brothers and Sisters of the Assisi Franciscan order, a stalwart simplicity and pioneering purposefulness came through.

My preconception of “Minnesota nice” was shifting to encompass both warm acceptance (even forgiveness) and firm insistence on a tradition of orderly performance. I felt welcomed and perfectly nervous about the primal learning that was about to be unleashed. As a member of the planning group, I had successfully advocated for a series of messy, self-organizing forms of learning.



The author, in the shadow of the Mayo Brothers mural as messy self-organized learning unfolds.

We Have Liftoff

The legendary Mayo Clinic founders, lithographed larger-than-life on 30’ by 20’ banners in the Great Hall, are gazing down on a swirling jumble of 150 two-legged learners. The confab is all about scientific advancements of the most complex kind. We have asked the question: “How are we – policy-makers, clinicians, and managers – putting the emerging science of complexity into our practice?” *The founding Mayo Brothers and the Assisi Sisters should approve. Yes?*

Yet, the gathering has the feeling of a communal watering hole... thirsty, raucous critters enjoying each other and the cacophonous rhythm of sharing what is important in the moment. In small groups without tables, participants are leaning toward the center of their circles, straining to catch the next word or gesture. They are so close to one another, it looks more like a café conversation among close friends than a professional meeting among complexity scholars, policy-makers, and practitioners. Lively stories are the medium of exchange. *I worry a little about approval from above... from the Brothers Mayo and the Sisters Franciscan.*

Caves, Campfires and Watering Holes

Every living thing does it -- bees swarm, birds flock, fireflies flash, fish school and two-leggeds talk. All the critters are signaling “what to do,” “how to avoid danger,” or “where to go next” for food, shelter, or sex. We are attracted to these exchanges and the signaling often creates beautiful patterns and rhythms out of what appear as “messy” interactions.

Two-leggeds may have the most complex social signaling and the most creative adaptations around. Nonetheless, the underlying forms and patterns of learning may not have changed much since our enlightened move out of caves. Primordial metaphors for learning, suggested by David Thornburg [1], may help to illuminate the way we think about learning and adapting together. Additionally, they may help us explain why some learning events are great and others are tedious.

Thornburg describes three elements of a primordial metaphor for learning together. Each is characterized by a particular form of exchange – *one-to-many*, *many-to-many*, and *one-to-self*.

- The Campfire *One-to-many*
A storyteller shares her wisdom around a single focal point or theme - one voice relating to many with an illuminated backdrop. The stories are full of nuance and metaphor, welcoming deep listening and many interpretations for all.
- The Watering Hole *Many-to-many*
A central gathering place where everyone shares rumors, news, gossip, and local discoveries with anyone that shows up. Conversations are informal exchanges among peers and strangers passing through where participants are both teachers and learners.
- The Cave *One-to-self*
A place where we relate and listen to ourselves more deeply. A time for reflection and meditative states. The focus is on an internal “conversation” and the internalization of wisdom.

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These forms of learning and exchange predate the written word, yet live on in our modern day lives, at home, work and in our communities. At learning events, the *campfire* morphs into the lecture illuminated by a projection screen; the *watering hole* morphs into the coffee break or cocktail hour; and, the *cave* morphs into quiet time or self-reflection.

Balancing the Primordial Forms

To explore why the Plexus/Mayo event seemed so successful, let's assume that great and powerful learning happens at a conference when these elements are balanced and does not happen when they are not balanced. Additionally, let's assume that the sequence and duration of campfire, cave and watering hole exchanges make a difference in the quality of learning.

So, let's examine how the basic elements of the Mayo/Plexus conference learning fit into this metaphor.

Campfire (one-to-many exchanges) conference design elements included:

We are not what we know but what we are willing to learn.

Mary Catherine Bateson

- *Keynote lectures* by distinguished scholars focused on wisdom derived from the frontiers of complexity research. The stories and metaphors from their journeys were shared.
- *Exploratoria* sessions explored single themes with a limited number of presenters telling their story, often full of twists and turns, about complexity-in-practice (in policy-making, clinical care, and management.)

Watering Hole (many-to-many exchanges) conference design elements included:

I talk in order to understand.

Robert Frost

- *Conversation Cafes* [2] offered lightly hosted dialogue among small groups of participants and faculty on BIG topics. Members joined “spontaneous” groups of 5 or 6 participants in minimally structured conversation about complexity in practice. Emphasis was placed on the emergent, unpredictable qualities of conversation and momentum.

- *In Conversation* panels featured unscripted reflection and conversation among selected faculty (e.g., practicing clinicians or administrators are matched with scholars). Four to five members explored similarities and differences in their practical experience. Also, they were encouraged to make sense out of what is happening in (or what is emerging from) the conference conversations.
- *Home Base Groups* were composed of groups of four “strangers” that engaged in brief sense-making conversations throughout the day. The groups formed spontaneously at the beginning of the conference.
- *Emerging Thoughts “Talk Show” Hosts* featured two eloquent community leaders reflecting, laughing, improvising, and swapping stories at various points throughout the day. They noticed “out loud” what themes were rising and falling in the room. They also collected and shared questions from participants.

Cave (one-to-self exchanges) conference design elements included:

*The future enters into us in order to transform itself into us...
long before it happens. Rainer Maria Rilke*

- *Journaling & Reflection Pauses* in the middle of keynote presentations and at the beginning of DAY II encouraged self-reflection. The focus was on unique, personal questions emerging from the lively context of conference conversations.
- *Arts Inter-Weaving* included music, movement, and graphic arts incorporated into the formal learning activities. An improv Jazz band played and reflected on the complex conversational qualities of their music. Participants were invited to write their emerging questions on a graphic tapestry created during the conference. An animated slide show featured philosophy, poetry, and complex biological patterns played during breaks and breakfast. Participants were invited to embody CAS principles with playful movement exercises. Each of the arts encouraged internalization and self-reflection.

The design elements or learning practices were woven into a flow of conversations among participants and faculty. Our desire was to create a shared, co-creative space for learning and imagination to flourish as we explored how to put complexity into practice.

A repeated sequence each day was: arts interweaving, home base, lecture, journaling, exploratia, conversation café, panels, talk show hosts, arts interweaving. The shift from one practice to another came in rapid cycles – from cave, to campfire, to waterhole and back again. There seemed to be something surprising, unexpected, perplexing, or funny around every corner.

Theory That Makes A Difference

Our conference focus, the emerging science of complexity, invited an experiment in learning. Complexity science is the study of systems that are characterized by nonlinear dynamics and emergent properties.

Complex Adaptive System (CAS) attributes include:

- Individual agents of the system change themselves (they adapt)
- Complex behaviors can emerge from a few simple rules that are applied locally
- Emergence of novelty & creativity is a natural state
- Order emerges without central control
- Non-linearity: small changes can have BIG effects
- Systems are embedded in systems & their interdependency matters
- Not predictable in detail: forecasting is an inexact art
- Co-evolution of life proceeds through constant tension & balance

Adapted from Paul Plesk

The focus of complexity science is in the study of patterns and relationships, rather than parts and structure. It views systems in far-from-equilibrium states rather than at the point of stability or control. A CAS insight is that order is not only the sum of single actions/intentions, but also the collective (often surprising) result of nonlinear interactions. Creative adaptability arises in far-from-equilibrium conditions that include uncertainty and difference among individuals in a system.

Nothing More Practical Than Good Theory

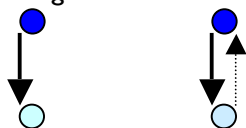
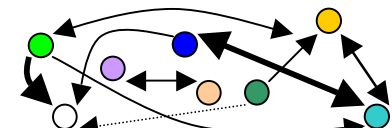
The following chart outlines (and simplifies) two approaches or pedagogies – conventional and complex-adaptive-system (CAS). Elements of both approaches were used during the conference. Clearly, the Plexus community leans toward the CAS approach.

There are two kinds of truth. There are superficial truths, the opposite of which are obviously wrong. But there are also profound truths, whose opposite are equally right.

Niels Bohr

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<p>APPROACH →</p> <p>↓ ASSUMPTIONS ABOUT LEARNING</p>	<p>Conventional</p> <p>Controlled & managed by designers or trainers</p> 	<p>CAS</p> <p>Self-ordering among participants and themes</p> 
<i>Sources of Learning</i>	Expert-driven lectures & skill building sessions from faculty-to-participants	Quality of connections, acknowledged diversity, & information flow <u>among</u> participants
<i>Finding Direction</i>	Limit learning objectives to meet pre-determined expectations; alignment is valued	Explore a broad landscape that evolves with diverse, unfolding interests; coherence is valued
<i>Content</i>	Narrow specific content to each discipline; keep learners segregated	Explore theory ~ practice that spans or transcends disciplines; mix learners
<i>Continuity</i>	Focus on shared values & vision to provide stability for learners	Focus on differences that make a difference to evoke or educe new insights
<i>Purpose</i>	Sharpen critical thinking & judgment by providing more expert information	Draw out generative thinking & resilience by connecting learners
<i>Defining Success</i>	Individual achievement and mastery; competency building or gap-closing	Social sense-making in communities of practice; creative advances into novelty
<i>Agenda</i>	Tightly managed to minimize what might go wrong or out of order	Semi-permeable boundaries that create conditions for self organization, adapting as the learning unfolds
<i>Learning Process</i>	Controlled execution to achieve pre-determined objectives & standards	Messy exploration to achieve higher levels of fitness & unique results
<i>Setting</i>	Limit the number of sensory inputs & unscripted movement	Diversify sensory inputs and encourage self-directed movement

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Importantly, many of the differences are qualitative and seem to come alive through active participation. Inter-subjective and consensual assessments of the experience – how the learning *feels* as it is unfolding among participants – come into play. The chart does not do justice to the differences because they are non-quantitative, largely non-verbal, and often emotional. As Brian Goodwin has suggested, complexity is a science of qualities [3] and he encourages us to reclaim them [4].

LIBERATING STRUCTURES

Liberating Structures are simple methods that make it easy for groups of people to be creative, adaptable, build on each other's ideas, and get results.

This is a short list of methods that bring new life and depth to effective interaction. This selection is most useful in conference settings with diverse groups of people.

Impromptu Networking

Quick Rounds of Purposeful Conversation With "Strangers"

Appreciative Interviews

Creating Momentum by Building On "What Works Right Now"

Ecocycle Planning

Sifting Activities & Strategies Through Birth, Maturity, Creative Destruction & Renewal

Generative Relationships

Understanding Patterns in Relationships that Create Surprising New Sources of Value



Making Space with TRIZ

Designing a Perfectly Adverse System to Make Space for Innovation

15% Solutions

Noticing and Using the Influence, Discretion and Power Individuals Have Right Now

Wise Crowds Group Consultation

Tapping the "Wisdom of Crowds" To Solve Problems Together

What, So What, Now What? Debrief

Reflecting on Experience and Making Adjustments-As-You-Go

Conversation Café Dialogue

Making Sense of and Forming Consensual Hunches about Big Challenges

User Research & Improv Prototyping

Tapping Tacit and Latent Knowledge in Seriously-Playful Rapid Cycles

Emergent Properties of Learning

The interaction of participants, learning practices, and the content matter created emergent themes and qualities that cannot be explained solely by the elements themselves. Nonetheless, our learning practices clearly have something to do with it.

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Overall, the focus of these approaches was on “social engagement for sense-making and generative thinking” and restoring complex variability in learning... in contrast to “tightly managed control for competency-building among individuals” and increasing the amount of expert information. Loose coupling between themes and participants - leaving a generous space for imagination, multiple meanings and chance meetings among participants - seemed to make a difference.

We trusted in the self-organizing capabilities in a diverse conference community. Everyone seemed to be delighted and challenged to make sense out of complex interactions and content from multiple disciplines.

In contrast, conventional planning focuses on minimizing what might go wrong and moving people smoothly through an agenda. Good design and facilitation controls movement toward pre-determined aims or learning objectives. Often, the planners’ role is to reduce the number of surprises and divergent thoughts that pop-up as scripted presentations are executed. The unexpected is unwanted, unmanageable variability.



Alternatives that increase healthy variability in learning yet maintain coherence are not well understood or often practiced. Complexity science suggests that a structured-yet-improvisational approach can increase creativity and adaptability.

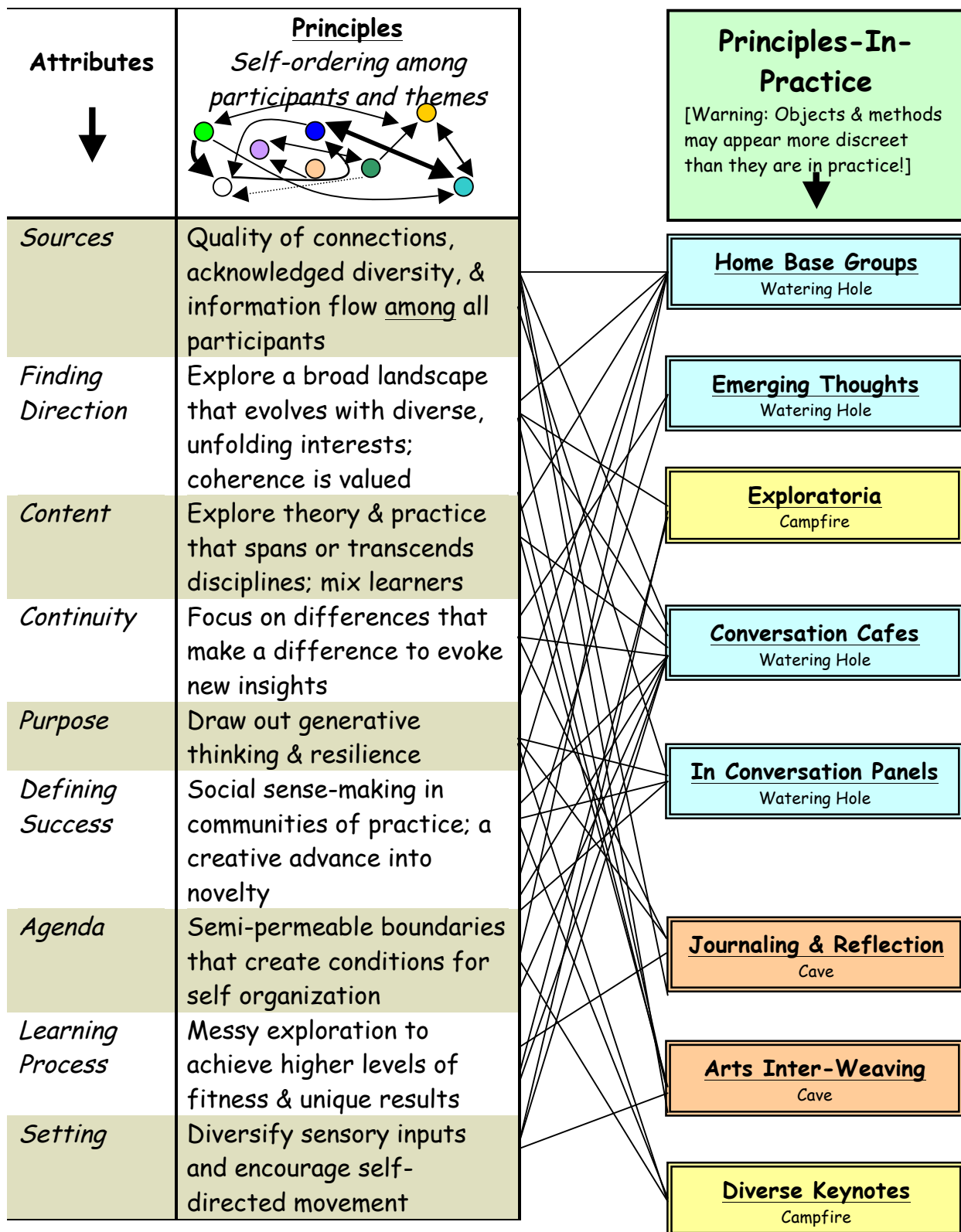
In this framework, the planners’ role is to increase variability within loose boundaries -- revealing and working with difference, paradox, and emergent themes. This rich, messy variability in learning creates conditions in which transcendent understanding can emerge. The learning of the community transcends (and spurs on) the learning of the participants.



For this co-evolution to happen, the conference planners and the conference community must find ways to respond to constantly changing needs and deepening curiosities within the community. Many of our learning practices seemed to increase responsiveness in-the-moment.

The following chart outlines links between complexity principles and learning practices employed during the conference. Many of the structured-yet-improvisational practices embodied more than a few principles.

Learning is led by questions and fed by feedback. Eric Vogt



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Building On Success

The learning at this event was powerful and full of novel exploration for participants. In short, it was wildly successful. The planning committee and a large majority of participants were delighted and surprised.

In contrast to learning from failures or solving problems, this article explores how to build on and amplify learning in a conference as it is unfolding. As one of conference planners, here are insights that I will apply to future learning events:

- try to balance the three primordial forms of learning – don't offer too much "campfire" content and expertise, it can block learning and overwhelm participants
- make formal use of messy "watering hole" exchanges – making sense together (e.g., in Conversation Cafes) will reveal better questions, local talent, unexpected momentum, and new frames for decision-making
- build-in "cave" time to deepen experience and spark imagination – interweaving the arts and reflective pauses can be very effective learning elements that invigorate participants
- draw out more difference in perspective as the meeting unfolds - don't cover-up diverse views... they lead to novelty and insight
- seek out the BIG questions and curiosities in the room – don't worry about answering all the questions, they become worthy attractors for future exploration
- trust that the participants will makes sense of difference and complex content - believe in participants resilience more than they believe in it themselves
- create ways to amplify emergent themes and build them into unfolding conversations - don't miss opportunities for transcendent learning-in-the-moment with the imaginations at hand

While these insights are not intended to serve as best practices ready-to-apply to any context, they are influencing and guiding my design work. My confidence in what seemed to be risky or messy learning approaches has been bolstered. My confidence in the creative adaptability of learners has been reaffirmed.

Breathtakingly Subtle Learning

Like many aspects of “applied” complexity science, these insights are both devilishly subtle and perfectly breathtaking. They have made a palpable, qualitative difference in my pedagogy and increased my joy in learning. As novelist Doris Lessing suggests, “That is what learning is. You suddenly understand something you've understood all your life, but in a new way.”

I sense the founders of the Mayo Clinic, peering down on us from their well-earned places on the walls above, are suspending judgment. Waiting to see what complexity science will contribute to future generations. I suspect they are pleased with our intellectual curiosity and a bit shocked or bemused by our lively forms of learning.

For complexity-inspired participants, it is no surprise that orderly learning arises in messy, far-from-equilibrium conditions. Let the campfires burn. Contemplate in the cave. Meet me at the watering hole, we have stories to tell!

~ ~ end ~ ~



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1. David Thornburg. "Campfires in Cyberspace: Primordial Metaphors for Learning in the 21st Century," a presentation at the *JonesKnowledge.com™ Symposium 2001*
2. Keith McCandless, "Conversation As A Creative Advance Into Novelty," 2002, see www.conversationcafe.org or www.socialinvention.net
3. Brian Goodwin, "From Control To Participation Via A Science of Qualities," Spring, 1999, *ReVision*, Vol. 21, No. 4, pp. 2-10.
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Attachment: Creative Novelty Potential -- Self-Assessment

Additional articles in a complexity-science-inspired series by Keith McCandless:

"Safely Taking Risks: Complexity and Patient Safety," (2008). *Exploring what will help safety leaders match effective approaches to simple, complicated and complex challenges, focusing on the most entangled and chronic.*

"Mastering the Art of Innovating: A Funny, Wonderful Thing Happened on the Way to My Deliverable!" (2006) with Linda DeWolf. *Illuminating the interplay of make-it-happen and let-it-happen innovation strategies among nine innovation grantees.*

"Surprise & Serendipity At Work: Managing the Unknowable Future," (2002) with Jim Smith. *Scenario-planning insights with a complexity twist at Group Health Cooperative.*

"Conversation As A Creative Advance Into Novelty; A Collaborative Hunch-In-Progress" (2002) *Exploring how dialogue unleashes creative adaptability and resilience via Seattle's public Conversation Café movement.*

"Reliability, Resilience and Results in Operations: Designed Autopilot and Collective Mindfulness At Work," (2002). *Exploring behaviors that help people collectively and mindfully respond to surprise and complexity.*

"Integrated-Autonomy: From Shilly-Shallying to Unleashing System Vitality" (2002), *Reflecting on the paradoxical development of distributed systems, moving beyond "bi-polar swings" between decentralized and centralized strategies.*

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Creative Novelty Potential -- Self-Assessment

In your learning design, to what degree have you explicitly structured the following elements? This assessment is based a 1 ½ day learning event. Adjust as needed.

1. Percent of learning time outside of formal lectures (one-to-many exchanges)?

0	1 - 10%	2 - 20%	3 - 30%
	4 - 40%	5 - 50%	
2. Number of opportunities to make sense of BIG challenges or paradoxical realities that invite participants to the edge of what they know and beyond?

0	1	2	3	4	5+
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3. Number of opportunities to talk with diverse “strangers” or folks from other disciplines or work functions?

0	1	2	3	4	5+
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4. Number of self-reflective or silent opportunities for participants to collect thoughts, explore deeper questions, or spark imaginations?

0	1	2	3	4	5+
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5. Number of formal presentations that feature frontiers in research and the edge of current understanding?

0	1	2	3	4	5+
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6. Number of art forms (e.g., music, dance, improv, poetry, storytelling, drawing) interwoven with learning themes?

0	1	2	3	4	5+
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7. Number of opportunities for everyone to share their own ideas for moving forward together without regard to formal position or rank?

0	1	2	3	4	5+
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8. Number of unscripted sessions or groups that form in-the-moment to respond to themes that emerge as the conference unfolds?

0	1	2	3	4	5+
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9. Number of communities, groups, or individuals with very different or unique perspectives that you have included into the conference community?

0	1	2	3	4	5+
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10. Number of shared meals and social events that mix participants and invite conversation?

0	1	2	3	4	5+
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Scoring Your Creative Novelty Potential

- 0-10 – Night of the living dead. Everything in its place & a place for everything.
 10-20 – Better the Devil you know than the Devil you don't. Keep the lid on.
 20-30 – Discretion is the better part of valor. Liveliness might pop out.
 30-40 – Though this be madness, yet there is method in it. Complexity unleashed.
 40-50 – Every journey has a secret destination of which the traveler is unaware.
 50+... – That which does not kill us makes us stronger. Hold onto your hats.