Meshworking Integral Intelligences for Resilient Environments; Enabling Order and Creativity in the Human Hive

By Marilyn Hamilton, PhD, CGA

Abstract:

How does the practice of meshworking expand integral intelligences for the human hive (aka city)? This article shows how meshworks integrate the self-organizing network of city relationships with hierarchies of structural organization, so that collaborations are recalibrated through networks to communities and holarchies of practice. Drawing on years of "glocal" civic activism, transnational inquiry, organizational capacity growing and public engagement, the author links the intelligences of meshworking and navigating with integral vital signs monitors. This article explores how the practical application of meshworking stimulates life conditions where integral capacities can naturally evolve and enable resilience in the human hive. (100)

Marilyn Hamilton PhD, CGA, Royal Roads University

Author of *Integral City: Evolutionary Intelligences for the Human Hive* Marilyn meshworks change in the "human hive" that is ecologically informed, operationally integrated and glocally resilient. Marilyn designs integral studies for graduate programs at Royal Roads University, CIIS , the Adizes Graduate School and Integral City Meshworks Inc.
www.integralcity.com

Glossary:

Community of Practice: a community of practitioners who have developed norms and/or agreements about how to replicate a practice in any human sphere – whether that is professional like accounting; commercial like insurance claims processing; artistic like stone sculpture; or agricultural like growing organic fruits.

Fractal: simple patterns that repeat at all scales, which in living systems, produce complex designs and behaviours.

Holon: a whole system made up of other whole systems. (A term coined by Arthur Koestler.)

Holarchy: a hierarchy of hierarchies or holons; or a hierarchy of whole systems; a higher order system that includes all the lower order systems in its functioning. (A term coined by Arthur Koestler.)

Human Hive: a metaphor for the city, applying the concept of the integrated living system to a species collective habitat; like the beehive is to the honey bee (apis mellifera), the human hive (or city) is to humans (homo sapiens sapiens).

Integral: a term describing a whole system that integrates and synthesizes multiple perspectives, levels of development, lines of development, and types of form. In this discussion I am using the Integral Metamap developed by Ken Wilber with major contributions from Spiral Dynamics. It has four quadrants (upper left for subjective, upper right for objective, lower left for intersubjective, lower right for interobjective) and eight plus levels of development. Spiral Dynamics describes the eight levels of development in terms of emerging levels of complexity. These eight levels are often compressed into traditional, pre-modern, modern, post-modern and integral.

Intelligences: capacities that enable life to adapt, survive and thrive in any given life conditions.

Integral intelligences: a cluster of intelligences that are integrated so that they work together to optimize whole systems function. In the Integral City they are identified as Contexting, Individual, Collective, Strategic and Evolutionary intelligences.

Meshwork: the emergence of patterns in the brain, resulting from the neuro-chemical connections of synapses that produce a hairnet-like mesh of axons (Bleys, Cowen, Groen, Hillen, & Ibrahim, 1996), characterized by major primary connective pathways that produce and intersect secondary, tertiary and many further levels of connectedness. It appears that the meshwork self-organizes connections and when a certain density and/or repeated use of pathways arises, a hierarchy of complexity emerges that enables the brain to replicate the patterns (and the capacities that arise from them) allowing retention of learning and efficiencies of energy use. This cycle of self-organizing and hierarchical patterning continues throughout a lifetime, allowing the brain to build up a repertoire of learned behaviour while continuing its capacity for self-organizing adaptiveness to dynamic environments and never-

ending stimuli. While we can map these structures through fMRI scanning, we can also assess the co-related structures of consciousness that emerge in the mind from ego, to ethno, to worldcentric (Beck. 2010b).

Meshworking intelligence: an intelligence that creates a "meshwork" by weaving together the best of two operating systems — one that self-organizes, and one that replicates hierarchical structures. The resulting meshwork creates and aligns complex responsive structures and systems that flex and flow. This occurs in both the conscious mind and physical brain on an individual basis. Collective intelligences also appear to have emerged that can be evolutionarily located in intersubjective and interobjective contexts.

Resilience: the capacity to adapt to changing environments, survive and thrive.

Resilient Environment: an environment that is a habitat or eco-system for a given species; eg. like a beehive and the eco-region from which the bees collect energy in the form of pollen and nectar and pollinate the flowers and plants. In this article the author borrows this analogy to describe the eco-region of a city as the environment for human hive.

> *It may be … that our minds are a kludge (or bricollage) of different kinds of intelligence: some intelligent abilities arise out of decentralized and parallel processes, others from centralized and sequential ones….*

(De Landa, 1995)

Meshworks In Formation

James Lovelock proposes that humans are Gaia's most advanced "organ of reflection" (Lovelock, 2009). He says it is our job to improve that reflective capacity in the interests of our species' survival and evolution. I propose that the collective life of the human hive provides enormous opportunities to create the conditions to accelerate our reflective capacity. And at this time of world crisis, developing practices that grow our consciousness is a matter of life or death.

Meshworking is a natural capacity building process that enables effective and efficient use of energy in progressively more complex integrations. It appears that the Universe creates complexity using meshworking processes. The process of creating a meshwork enables complex adaptive systems to emerge. This article examines the characteristics of meshworking, meshworks and meshworkers and how the city or human hive integrally emerges from these processes, practices and people.

When I set out to look at the City as a whole living system, I was attracted to the integral model, developed by Ken Wilber, because it embraced both the visible and the invisible aspects of the City (Wilber, 1995, 2000, 2006). It allows us to see in terms of different views of reality, how each of the quadrants relates to one another – how the subjective and the intersubjective realities are linked to the objective and interobjective realities and vice versa.

"Integral City: Evolutionary Intelligences for the Human Hive" (Hamilton, 2008) uses four versions of the Integral Map (reproduced in Appendix A). This article builds on Maps 1 and 2 (on Page 62) but primarily references Maps 3 and 4 which reveal the relationships that we can see in the self-organizing elements of Map 3 and the structural elements of Map 4 (see Page 63).

Integral thinking allows the use of some fuzzy logic to compare the different metrics that one uses to see reality from each quadrant and gain insights about how they might be influencing one another. This provides a platform to see how the reflective capacity of the individual (UL) relates to the shared worldviews of their culture (LL) and connects to the structures in the brain (UR) which in turn become translated into structures and systems in our physical environment (LR).

The basis of complex adaptive systems applied by Spiral Dynamics (D. Beck & Cowan, 1996) to the emergence of human capacities (values, leadership, organization) suggests that we can measure intelligence as it becomes more complex. The integral parsing of the Spiral Dynamics framework reveals that the different quadrants arise from different qualities and can be know through different epistemologies and metrics. We can locate the qualitative

measurements in the left had quadrants (subjective and the intersubjective) and quantitative metrics in the right hand quadrants (objective and interobjective). My own research has proposed that the descriptors of developmental emergence in each quadrant reveals the connections between the metrics in consciousness capacity (UL), values (LL) brain-body development (UR) and asset development (LR) (Hamilton, 2003).

Responding to Lovelock's injunction to evolve our reflective capacity, the integral and spiral models offer maps to notice or design feedback loops and measure our progress. The use of meshworks to explain how integral developmental capacities emerge, offers us a view of the city that explains what is working, what is not working and what may emerge.

One of the ways that Don Beck (D. Beck, 2000, 2004, 2007) uses MeshWORKS™ or Meshwork Solutions™ is to refer to the processes he designs for an organizational system. In order for the organization to coherently operate, he proposes the alignment of the X template (for functional flow), Y template (for resource fitness) and Z template (for vision integration). At the organizational level, his definition for a MeshWORK™ is when these templates emerge in a system. (This is one of a series of explanations that he uses, applying Meshwork Solutions™ at different levels of scale up to nation and global systems (Beck, 2010b).)

Guided by Beck's body of work, I was intrigued to discover that meshworks was originally coined as a term by the brain scientists. Images of meshworks from the microscope, include descriptions that the brain builds itself by "Laying down large synaptic highways which created Scaffolds of communication corridors – these in turn then [create] secondary and tertiary corridors -- and eventually we end up with a kind of hairnet of axons" (Bleys, et al., 1996).

Manuel DeLanda (1995, 1997, 2006) describes meshworks in terms of how the brain builds a mind and how a mind builds the brain. He reveals the process of emergence where the self-organizing connections amongst synapses emerge into habitual patterns that create the conditions for the sudden emergence of a new brain structure that enables learned capacity to be locked into the brain. (Readers familiar with the functioning of Holosync will recognize the principles that this technology uses to accelerate the brain's capacity to develop more complex structures (IntegralLife, 2010) (Harris, 2007). More recent brain research is revealing the role that even microscopic brain structures (called microtubulin) may have in processing the information pathways that become reinforced at the micro spatial and nano-second time structures that govern the brain and consciousness and in fact the energy field in which they exist (Hameroff, Huston, & Pitney, 2010).

Field theory (McTaggart, 2001) itself offers intriguing explanations that potentially explain the sudden, unexpected emergence of new capacities in the system, by suggesting that living systems have morphogenic fields (Sheldrake, 1988, 1999, 2003) that exist in the zero point energy field (Laszlo, 2004; Mitchell & Williams, 2001) and which hold species related information.

At the micro level, it appears that the energies and dynamics of meshworks develop the mind/brain's natural potential by using a combination of self-organizing processes and

hierarchical structures. Meshworks have an intriguing both/and nature that seems to take the best of two processes that seem to be dynamically opposed. But when they are married into an iterative cycle (supported by a field of remembered habits) each contributes to expanding the influence of the opposite process; ie. Self-organizing process expands structural complexity; and structural complexity expands self-organizing potential.

This is a dynamic that lies at the heart of the resilience model described by the multi-disciplinary research team who mapped out the four-stage resilience cycle of Panarchy (Gunderson & Holling, 2002) : exploitation (of unaligned resources), conservation (and structuring of aligned resources), destruction (of alignment and relationships) and redistribution (of resources to a self-organizing field). This cycle has been more recently explored by Howard Bloom (Bloom, 2010) who calls it the pendulum of re-purposing. He suggests that the cycle explains the alternating fortunes of resources and people in the boom/bust, integrate and differentiate swings of ever emerging economic complexity, using principles that the Universe has developed from deep time.

This cycle also seems to lie at the heart of the dynamics in Graves' (Graves, 1974) developmental learning model (which underlies the framework of Spiral Dynamics) and the ways humans are naturally created to be complex adaptive systems who relate to one another (and environmental life conditions). Grave's six stage learning model proposes that a person:
1. must have potential in the brain
2. have solved current life conditions
3. experience dissonance, such that a problem cannot be solved using existing solutions
4. experience an aha insight
5. integrate the insight into prior learning (transcend and include the insight so that previous behaviours, psychology, culture and systems make new sense)
6. consolidate the integration into all sectors of their life.

Beck elaborates further on these conditions at the organizational and/or societal scale, adding four more that enable large scale change (Don Beck, 2006): inserting energy into the system; mapping change from what to what; leveraging tipping points; and anticipating the next set of problems, that will emerge from new solutions.

So we can see that meshworks apply at the microscopic level, the individual and collective human level. They also occur at the macro scales of the Universe and the meso scale of the city.

In 2008, EnlightenNext (2008) published photographs taken by powerful Hubble telescope space shots that showed galaxies in formation and microscopic images of synapses with their long axons spidering out from the neuron. The fractal nature of these patterns was so unmistakable that the images of the galactic scale were virtually interchangeable with the images of the microscopic scale. A critical contribution of alignment relating these widely separated scales of the micro and the macro, was offered in the observations of the authors of "The View from the Center of the Universe" (Abrams & Primack, 2006). They proposed that in all the manifest universe, the human was at the mid-size of all things – what they called

the "Midgard". Thus human systems, being in that size zone had a peculiar opportunity to adapt its functions as "intelligent stardust".

In an instant of intuitive recognition, I started to consider the human hive as being at the mid-size of human systems (between the individual and the nation) and wondered what critical role cities have to play in humans becoming Gaia's organ of reflection? In considering the energy, matter and information that our special case of intelligent stardust had evolved to, I started to examine aerial images of cities – particularly the ones taken at night where you could see the energy patterns in the city – and not just the built structure. The more I looked at them from 20 or 300000 feet the more they seemed to me to be the same patterns that I have been viewing through the telescope and microscope. So I started to wonder about the possibility that the city is the same fractal pattern we can see at the macro scale at the galactic level, and the micro scale at the neuronal and microtubulin level. Is the human hive the meso scale of this pattern and how does this pattern emerge?

The weaving together of fractal patterns that used the capacity to learn and reflect in a cycle of learning called meshworking seemed to explain the patterns of connectivity and thus patterns of relationships in the City (and galaxies and brain cells). Wheatley and Frieze (2006) propose that connections in the meshworking process, like the hairnet mesh (described above) enable an infinite number of self-organizing pathways that span thoughts, ideas, innovations, feelings AND emerge into directed, dependable, learned behaviours. They identify the progressive complexity of networks, communities of practice and centres of influence. Without naming it as such, they describe the behaviours of a meshwork, the practices of meshworking and the skills of a meshworker.

Thus we have identified the context and elements of a framework that might explain the capacities and behaviours of cities as human systems. Is it possible that cities are nothing more or less than a meshwork of the relationships of the people who live in them; the outcomes of the minds/brains that created them; and the fields that contain them? Moreover, can meshworks explain the functioning of collectives, communities and the social intelligence that create Gaia's organ of reflection?

My proposition is that meshworks explain how the city emerges from the interconnected patterns of matter, energy and information that make up the city. A meshwork or meshwork of meshworks enables capacity to arise from the integration of relationships, embedded in ideas, behaviours, cultures and systems that results in order and creativity in the human hive. I call that capacity Meshworking Intelligence.

What is Meshworking Intelligence?

Meshworking intelligence (Hamilton, 2008) creates a "meshwork" by weaving together the best of two operating systems — one that self-organizes, and one that replicates hierarchical structures. From an integral perspective this operating system connects all four quadrants and recalibrates the levels of development (Hamilton, 1999). The resulting meshwork creates and aligns complex responsive interior and exterior structures and systems that flex and flow.

Meshworking intelligences are triggered in the mind/brain by dissonance (ie. constraints) in the environment. The mind/ brain's capability of re-organizing itself and releasing new potentials allows for the emergence of new meaning making, worldviews, values systems and new capacities. At the same time meshworking intelligence utilizes hierarchical structures and capacities to create sorting and selecting mechanisms that allow the mind/ brain to make survival choices. As structural capacities emerge, new values systems emerge as well, creating a level of complexity that develops where both our minds and brains can meshwork hierarchies and make hierarchies out of meshworks.

Meshworking intelligence uses imagination, courage and powers of attraction. It articulates designs from the meshing of the diversities in people and thereby releases and reorganizes new intelligences that are currently locked and blocked in silos of sameness.

Meshworking catalyzes a shift in the system, so that new capacities emerge and the system reorganizes itself into something more internally resonant and externally coherent with life conditions.

What Does Meshworking Intelligence Enable?

Because communities and cities are social holons with qualities that are emergent and produce artefacts of human life, they are outcomes of the mind/brains that have created them. The meshworks in cities seem to be fractal patterns that emerge at all scales of human systems. We can better understand how cities work and evolve by recognizing that their communities reflect evolving capacities to meshwork hierarchies and to make hierarchies of meshworks.

An enormous value of meshworking is that it embraces both the realms of the objective and interobjective space of physical people and built structures, and calls forth the capacities that lie in the subjective and intersubjective zones of the City. These are the inner domains of intention, purpose and culture.

Meshworking intelligences contribute to research, planning and management in the city.

Meshworks integrate the self-organizing webs of relationships. They enable innovation and new solutions because the nature of self-organizing is to connect agents within the boundaries of a system. When enough connections are made, within human systems, new solutions emerge and new adaptations to old problems are produced. That is one of the arguments for the value of diversity to creating resilient systems – by connecting formerly disconnected parts, the qualities of the system can actually shift unpredictably into a completely new form (Eoyang, 1997, 2007; Wheatley, 2006). Wheatley proposes that " in order to improve the health of a system, connect it to more of itself" (Wheatley & Frieze, 2006)

Meshworks are also good for integrating hierarchies of structural organization. One of the reasons the iconic images of organization (used in Map 4 in Appendix A) from Spiral Dynamics are so useful, is they capture a series of structures that track the developmental

complexity in the lower right quadrant of our systems and organizational structures. However, they do an equally good job of representing how our brains become structured by learning in the upper right quadrant. These icons represent the series of progressively more complex structures that transcend and include our prior brain structures so that we can adapt to new life conditions and carry forward our prior learning, and recalibrate it into the new structures. And they are the proxy representations of the correlated capacities that emerge in the subjective intentional and intersubjective cultural realms. Thus the power of a meshwork is that it links self-organizing differences and hierarchical similarities across quadrants, levels (lines and types).

In broad strokes, meshworks create new pathways of intelligence in two ways:
1. They create hierarchical meshes – like meridian systems in the human body, or the special interest group alignment that emerges in community groups.
2. They cross-mesh parallel hierarchies – like organ systems in the human body (eg. Respiratory, circulatory and lymph systems); or city functions, systems, and physical plant in the city.

Meshworks in Action

Meshworks appear to be an evolutionary strategy, that has been in play since the Big Bang, where the Universe vacillates between self-organizing exploration and progressively more complex order (Abrams & Primack, 2006; Bloom, 2000, 2010). Order emerges out of a self-organizing system when sufficient connections within that system have been made to produce new properties in the system.

The human equivalent of the Big Bang, may well be the capacity to formulate a question that produces an inquiry; such as "how can we get to the moon?" or "how do we balance our energy needs and resources?" or "what is the connection between spirituality and science?" Such an inquiry arises out of imbalances (dissonances, constraints, provocations, shifts) in the existing order and opens the door of the next stage of self-organizing exploration of new possibilities (GingerGroupCollaborative, 2007). As Bloom, puts it the old system is launched into a new phase of re-purposing.

The process of meshworking (applying meshworking intelligence) applies meshworking principles as a design strategy that capitalizes on the ordering aspect of a meshwork to produce a desired end. Meshwork designs create conditions, practices and processes that move a heap of disconnected individuals into a network, then a community of practice, then spheres of influence. At the global level, a Netherlands team have been developing a practice that has served Millennium Development Goal 5 (the health of mothers and newborns) (Bets, Fourman, Merry, & Voorhoeve, 2008) and the climate change summit in Brazil (Merry, 2009a). Drawing on elements of the above described meshworking process, these pioneers have become meshworkers or meshweavers on national and international scale. In working together on these different projects they have developed a formative meshworking community of practice (described more fully below).

This kind of skilful facilitation requires a maturity of development that embraces more than inquiry and leadership. For our purposes in this article, I call the capacity building and alignment process "meshworking" and the people who do it within the system are "meshworkers". (Those who do it as system outsiders are starting to call themselves Meshweavers – but that may be a paradigm conflation that deserves another article.)

Elsewhere, I have described (Hamilton, 2008) the work of a number of meshworkers: for sustainable environments, learning communities and community engagement. Wheatley (2006) proposes four steps in using innovation to take projects to scale: Name (the issue, challenge, intention); Connect (people in the system); Nourish (the relationships); and Illuminate (what emerges). Amongst other criteria, Beck (2010a,b) proposes no meshwork exists until three templates emerge: X connects the pathway to realize vision; Y provides the support; Z integrates resources to achieve the vision. He suggests that you must design from the integral paradigm, so that a natural structure can achieve the vision the system desires .

My experience shows that it is important to create the conditions so that self-organizing and structuring can alternate their contribution to co-create evolutionary complexity. Skilled meshworkers appear, in some way, to follow these rules:
1. Catalyze fractal connections in the human hive. My early research showed these connections should link all quadrants and multiple levels (Hamilton, 1999).
2. Bring diverse individuals together who would not usually encounter one another.
3. Provide the resources and support so that individuals can link together in a network for ongoing communication and learning.
4. Build bridges across silos, stovepipes and solitudes (Dale, 2001) that normally separate individuals and networks, and facilitate participants to create a community of practice.
5. Recognize the depth of capacity in the meshwork – that not all people and organizations are working from the same worldviews, structures or values.
6. Enable the multiplication of networks and communities of practice (COP) and keep them linked in a natural integral alignment, through technologies that are appropriate to the people and situations involved.
7. Assist the COP to connect across geographies so that they mesh their learning, levels and lifecycles and develop the principles that underlie their structures and hierarchies.
8. Enable these structures to transform, transcend and transmute capacities to serve the world, by shifting into Spheres of Influence that offer new ways to make a difference.

From the experience of the transnational meshworkers in Europe and the national meshworkers, in Canada, it appears that the practice of meshworking enables the design of:
• Intentional Large-Scale Change
• Sustainable Plans
• Resourceful Management
• Resilient Evolution
• Integral Cities.

In looking at the application of meshworks to cities, a recent history of the city of New York provides an apocryphal example (Burns, 2004) of the marriage of now meshworks emerge

from the combination of self-organizing and structuring capacities. Robert Moses, the powerful New York City Planner was a hierarchy structuralist, while Jane Jacobs a new breed of community activist, became his self-appointed protagonist using a novel self-organizing approach to activism. Though neither was able to admit the merits of the other, together they brought elements of a meshwork to the city and increased its capacity for resilience because the city was forced to build infrastructure (by Moses) and engage citizens (by Jacobs).

In this section, I would like to use my own experience in one location, where the opportunity to observe meshworks, meshworkers and meshworking in a smaller container over the last decade has revealed the challenges faced by all who engage the phenomenon increasing reflective capacity within the human hive. From this experience, it appears that the span of time that each of the stages of meshworking can take is often much longer than our expectations suggest. Moreover, the kind of commitment required to hold the space long enough for emergence to happen demands a long term dedication (and even trust). Nevertheless, the observations of Wheatley (2006) support the proposition that the "natural conditions" of meshworking can be noticeably accelerated with skilful facilitation.

The learning lab for my study of meshworking in the Integral City has been a city much smaller than New York. It is the city of Abbotsford, located 100 km east of Vancouver, British Columbia, Canada, site of the Winter Olympics 2010. I have worked and/or lived in Abbotsford since 1984, witnessing its evolution from two predecessor municipalities to an amalgamated city; from a population of 80,000 to 135,000; from a small town with minimal infrastructure to the fifth largest city in British Columbia and the fastest growing city in Canada for the last ten years, with a university, regional hospital and cancer agency, and recreational facilities for all ages. I have also witnessed its reputation shift from that of a strong faith-based "City in the Country" attractive to families, to be labeled the "murder capital of Canada" after the murders of four youth, in gang and drug related circumstances, in the first six months of 2009.

With this context of my learning lab, I want to share three cycles of meshworking that have enabled me to experiment, develop processes and identify principles that reveal how the elements of meshworking build on one another and the outcomes of each cycle, enabling order and creativity to emerge more complexity in this human hive.(Please see Appendix B for a synopsis of my personal learning journey.)

Values Mapping: What do we know about our Community anyway?
When I joined the Board of Directors (BoD) for the Abbotsford Community Foundation ACF), the first opportunity for meshworking came, in 2002. Then the BoD asked, "If we want to be an effective community foundation, what do we know about our Community anyway?" In attempting to define the purpose for ACF, ACF's big dissonance was that City Hall (and thus the City) did not have an articulated vision for itself. As a result, ACF was operating in somewhat of a vacuum. It did not have a clear context in which to be of service. By naming that undiscussable, the BoD released the tension that prevented it from exploring what it was we did know about the city and in pursuing that inquiry, discover ACF's purpose.

Thus was born the conditions for mapping the values of Abbotsford's citizens using the values analysis framework I had developed studying the Berkana Community of Conversations using an integral lens (Hamilton, 1999).

Once the inquiry began, a series of unexpected connections emerged in a totally unplanned and self-organizing way. Partners emerged in the form of the City Recreation Department, another member of the BoD who operated a Research Firm and the community newspaper. My research methodology provided some order and we agreed to conduct research on Abbotsford's values. From those responses, an integral map of Abbotsford values emerged that showed that its key values were Family/Friends, Order/Good Management and Community Caring. By contrast the city's main difficulties (shadows) were unhealthy expressions of personal energy in crime, drugs, prostitution and inappropriate boundary management. The data also showed that the community valued most the family relationships in the lower left quadrant. The data was translated into an AQAL graphical display (the Flower Map in Appendix C) by the community newspaper, and shared with the BoD and committees, the City management staff; and many civil society groups over the years.

From what started as a stage of exploratory self-organizing the Values Map framed the answer to the precipitating inquiry and became the trigger for a new stage of order in the ACF. ACF applied the AQAL filter to examine its Granting process to ensure that it was fair and balanced. A new Grants application was developed asking respondents to report on intentions. Later ACF also used a similar framework to evaluate the quality of the outcomes so that it could improve its input into decision making.

In summarizing the meshwork process that emerged from the values inquiry, we can identify an early stage of highly generative self-organizing and several subsequent stages of progressively greater order as new connections were made amongst stakeholders, decision making processes and feedback loops.

Visioning: How do we imagine Abbotsford in 30 years?
Four years after the values mapping process, ACF became a catalyst for a different form of meshworking. In 2006, ACF was invited to become a Regional node in the Imagine BC Dialogues. This invitation invoked a conjecture expressed by Beck (2003; D. Beck, 2004, 2007), that in order for an applied meshwork to be effective a vision must be shared by people working together to achieve an inspiring outcome. Such a vision embraces people's differences and aligns their motivations and goals, effectively creating ecology of diverse agents (rather than a container of homogenous players).

The Imagine BC invitation asked "What do we imagine Abbotsford's future to be in thirty years?" It launched a self-organizing exploration for ACF to find partners in this new inquiry. It reached out to co-partners Social Enterprise Centre of the Fraser Valley , United Way of the Fraser Valley, and BC Healthy Communities. ACF advanced the self-organizing process by creating a Steering Committee, composed of skilled professionals, volunteered their time because they wanted to live in a successful and thriving city.

Their first step was to engage more self-organization by opening a dialogue with Thought Leaders in the city through storytelling. Next they found a new partner in the Community Newspaper who published the report of the Dialogue in a special section and distributed it to 33,000 households in the city. This produced an ordering picture of a possible new future and launched a second stage of self organizing. The steering committee opened their inquiry to the public and began a new cycle of self-organizing discovery and connections, which culminated in another community news publication distributed it to 33,000 households. Finally, building on the two prior images of possible order, the steering committee selected a key group of policy makers to complete their self-organizing inquiry. From this third dialogue a final community news report was published and distributed it to 33,000 households.

At the end of this first year of Imagine Abbotsford Dialogues, some citizens and activist groups suggested that the steering committee was a new political party, because the commitment and interaction of the group did not have a precedent. This provoked a subsequent round of dialogues in the following year which included the very people challenging the process. Over three years, the artful cycling between self-organizing engagement and ordering reports, enabled a new vision the City of Abbotsford 30 years from now to emerge. The meshworking process engaged as much diversity in the City as possible to contribute to critical themes (which acted as strange attractors to the agents who participated and the order that emerged). The themes were:
Year 1: Economy & Environment
Year 2: Culture & Learning
Year 3: Health & Community

Imagine Abbotsford was designed as an action research, action learning process that meshworked intelligences from all sectors, ages, genders and interests across the city. The Steering Committee estimated that over 400 different people participated (many multiple times). 33,000 households received The News reports 3 times per year for 3 years. Each year, the three different dialogues embraced a progression of perspectives and respondents, that started with Thought Leaders, then included members of the Public and concluded with Policy Makers. The 9 dialogues were published in the Abbotsford News, and can be found online at http://www.abbotsfordcf.org/AboutUs/ImagineAbbotsford/Reports.html

The same process was honed and repeated for three consecutive years, and resulted in the Steering Committee proposing to the City and its three committees that serve its sustainability initiatives (Economic, Social, and Environment), that the insights and outcomes from the Dialogues be integrated into the Strategic Planning Process. The City of Abbotsford agreed.

In addition, the ACF applied the recommendations (which had been analyzed using an Integral lens into Place Caring (subjective and intersubjective initiatives) and Place Making (objective and interobjective initiatives)) to create pro-active endowments committed to the wellbeing of the city. On ACF's first event in support of the endowments, it raised $100,000 towards solutions for affordable housing and homelessness.

Imagine Abbotsford demonstrated how creating a container where civic engagement using self-organizing connections can shift the system into an order that builds dialogue bridges across silos, stovepipes and solitudes. These bridges can then produce strategic outcomes. From the earlier meshwork associated with ACF, Imagine Abbotsford Dialogues built on the order of ACF's internal resources (people and information) that emerged from the prior meshwork and created new capacities through an inquiry that invited in multiple organizations and individuals. A core group of these people shifted into an integral worldview, which offered new ordering principles and new possibilities for applying meshworking principles in many other ways throughout the city.

Lifecycles: How can youth be supported to discover options for a healthy, vibrant life in Abbotsford?
 In 2009, the last year of Imagine Abbotsford, a shocking reminder of how a lack of vision and a failure to think in whole systems, can undermine a city's wellbeing made an unwelcome headline in the news. Four young men (two just ready to graduate from high school) were murdered in the clash of gangs and drug culture.

In response to this dissonance, key meshworkers from the Imagine Abbotsford Dialogues formed collaboration for an 18 month project in 2009-2011, (sponsored by SUCCESS and the province of BC's Welcoming and Inclusive Communities and Work Places initiative (WICWP)). Supported by collaborative community partners, the project was designed to develop the assets of youth aged 13-34 in the city of Abbotsford. The project, named Food for Thought (FFT), was borne out of the intention to create positive and proactive youth connections to businesses in the agricultural sector of the community as a means of moving them away from gang-related and antisocial behaviours.

This project had many resources to draw on because of the previous meshworking experiences – integrally informed people, paradigms, research and intentions. Members from the Imagine Abbotsford Steering Committee joined with the BC Healthy Communities who used an integral capacity building framework as a guiding philosophy. This project used the ordering principles of a developmental perspective on capacity building and framed the challenge to youth within asset development, inter-sectoral partnerships, healthy public policy, interconnected determinants of health while at the same time addressing the issues of environmental sustainability, community economic and enterprise development, and climate change (Abbotsford Team, 2009a).

Nested into the FFT project were two supporting projects – one for Public Education and the other for Knowledge Development and Exchange (KDE) (Abbotsford Team, 2009b). The KDE, provided integrally ordering research methodology, which developed and presented updated knowledge about Abbotsford's values base. The project built on the 2003 Values Map of Abbotsford. It injected self-organizing diversity into its design by utilizing student interns to conduct a survey of values in four language groups significant to Abbotsford: English, Punjabi, Korean and Mandarin. A random sample (self-organizing) telephone survey was also conducted. Together both collection methods produced data from 460

respondents. The questions asked were: what is important in this place; what is working; what is not working; and what do people aspire to? With special focus on youth and visible minorities, the map provided the values base necessary to create context for the larger DPE project and to create a prototype Integral Vital Signs Monitor, tracking progress in creating a welcoming and inclusive Abbotsford community.

This project built on the information and values patterns that had emerged from the 2003 and 2010 values surveys and identified values-based vital signs that included biological, psychological, cultural, and social dimensions. The project cycled self-organizing connections amongst youth and youth and food system business owners with the ordering processes of digital storytelling and entrepreneurial boot camps. The intention was to create the conditions for youth to discover and/or create linkages in our food system so that it can be sustained into the future. This challenge was framed as a leadership development exercise and community development initiative that would translate to less crime, healthier neighbourhoods, and higher personal incomes – all attractors of increased purchasing and new employees to Abbotsford.

The 2009-2011 FFT and KDE projects arose from the self-organizing connections that had started with the 2003 Abbotsford Values Map; and the insights about Abbotsford relationships and order that emerged during the 2006-2009 Imagine Abbotsford Dialogues. As it progresses, FFT is moving beyond the stage of network affiliations and is catalyzing diverse connections in the community into a community of practice in service to the wellbeing of the city's youth (and thus the wellbeing of the city as a whole). All these are indicators of maturing meshworks, which the Integral Vital Signs Monitor will use to provide feedback loops that affirm life giving directions and allow for corrective feedback to both the systems of order and systems of self-organizing in the city.

Meshworks in Principle

When we examine the three examples of meshworking in Abbotsford, we can see the progress from values mapping to dialogic engagement to action demonstration that has emerged complexity over the last decade.

Each of the projects has built upon the capacities that have emerged from the outcomes of prior projects. As Wheatley suggests the properties of the emergent system not of simply the sum of the individual contributions. Something much greater has emerged through the mapping of values which revealed worldview patterns and relationships; through Imagining Abbotsford which revealed a shared vision for the future we are willing to work towards; and for the inspired community of practice is working together to build youth capacity.

The continuity of key participants has enabled structural complexity and the interaction of new contributors has released creativity and attracted real resources into the community. It is as if the key actors in the city are aligning passion, purpose, priorities, people and planet.

When we look back over the three cycles, here are the steps that contributed to completing each meshworking cycle.

1. Create a system container by asking a burning question. Let finding the answer to that become the Purpose for your container's life.
2. Recognize and name the dissonance in the system – overcoming that dissonance provides the impetus or catalyst to change.
3. Identify the purpose for change – create the vision for changing from what to what?
4. Find the agents for change – enable leadership to emerge from those who have the passion for solving the catalyzing dilemma and/or attaining the vision.
5. Amplify the dissonance/catalyst/impetus for change, so others can see it.
6. Identify the resources needed to facilitate the process of change and invite others to contribute them so they can become involved.
7. Co-design a process for change that self-organizes passion, purpose, priorities, people, and planet. Expect it to be messy and enjoy the mess.
8. Engage as many stakeholders in the process as possible – actively seek out diversity and make room for difference. Ask who else should be here?
9. Create reflective feedback loops into the system so that participants can self-correct and develop operational structures that work.
10. Make the feedback accessible to all by publication and display; eg. community newspapers, online media, real time intelligence display systems.
11. Develop a real time Integral Vital Signs Monitor (IVSM) so that the system can be accountable to all
12. Celebrate goals attained, publish the results and pay forward your learnings so that other groups, projects, networks and communities of practice can build on your creative responses to changing life conditions and keep your environment resilient.

Meshworks in the Human Hive

My years of local civic activism have been inspired by the global and transnational inquiry of others. The work of Margaret Wheatley (Wheatley & Frieze, 2006), Peter Merry (Merry, 2009a, 2009b), Morel Fourman (Fourman, Reynolds, Firus, & D'Ulizia, 2008), Don Beck (D. Beck, 2000, 2004; Don Beck, 2010), the Ginger Group Collaborative and many others have inspired me to adapt their designs and insights for "glocal" outcomes. I hope that these examples have demonstrated how meshworking is an emergent process that arises from partnering, collaborating, togethering and collectively learning in the human hive. These experiments with the engagement through multi-year public dialogues, developing the capacity of civil society boards and connecting nodes of integral capacity in specific city sectors, could not have been tried without the contributions of many others in my communities of practice and meshworks. These pioneers inspire me that we can always create conditions for evolutionary intelligences in the human hive. We can enable integral capacities to naturally evolve through cycles of self-organization and ordering and in this way expanding our resilience in service to Gaia as her highest organs of reflection.

Can't you imagine that as cities mature into utilizing conscious meshworking, a global meshwork of human hives will emerge and we will wake up one day to discover that we have meshed Integral Cities into a glocal field of Resilient Cities?

References:

Abbotsford Team, W. I. C. W. P. (2009a). *Food for Thought, Summary Proposal, Demonstration Project*. Abbotsford: SUCCESS, Province of BC.

Abbotsford Team, W. I. C. W. P. (2009b). *Values Mapping and Integral Vital Signs Monitor, Summary Proposal, Knowledge Development and Exchange Project*. Abbotsford: SUCCESS, Province of BC.

Abrams, N. E., & Primack, J. R. (2006). *The View from the Centre of the Universe: Discovering our Extraordinary Place in the Cosmos*. New York: Riverhead Books, Penguin Group.

Beck, D. (2000). MeshWORKS™: A Second Tier Perspective & Process. The Spiral Dynamics Group.

Beck, D. (2003). private discussion

Beck, D. (2004). *Natural Designs and MeshWORKS™: Creating our Region's Tomorrow through Second Tier Leadership, Organizational Foresight and Integral Alliances*. Paper presented at the Spiral Dynamics integral, Level 2, Natural Designs.

Beck, D. (2006). Big 10 Conditions for Large Scale Change. Center for Human Emergence.

Beck, D. (2007). Meshweaving. In M. Hamilton (Ed.) (Meshweaving has a Zulu name ... I tried to approach this topic in ... Kosmos ....The contrast was with top down command control, and cultural plural egalitarian, to give the three dimensional weave....as we weave together yellow and turquoise notions we should be able to capture the field. ed.). Abbotsford, online.

Beck, D. (2010a). Natural Designs for Meshworking. Retrieved from Gaiaspace, Meshworking, Private

Beck, D. (2010b) Personal email May 31, 2010. Beck says he" began using the idea of Meshworks almost 15 years ago, and have used the symbols and processes to describe how to work across and within multiple diversities or entities to "connect what matters to design what works" especially in this age of collaboration. There is no doubt but that we are at the cutting edge in this 7th and 8th Level Code approach."

Beck, D., & Cowan, C. (1996). *Spiral Dynamics: Mastering Values, Leadership and Change*. Malden, MA: Blackwell Publishers.

Bets, J., Fourman, M., Merry, P., & Voorhoeve, A.-M. (2008). Developing a Roadmap and Meshwork for Millennium Development Goal 5: Building a template for in-country implementation and a global collaborative network to accelerate achievement of MDG5. Center for Human Emergence, Netherlands.

Bleys, R. L. A. W., Cowen, T., Groen, G. J., Hillen, B., & Ibrahim, N. B. N. (1996). Perivascular Nerves of the Human Basal Cerebral Arteries I. Topographical Distribution. (16), 1034–1047. Retrieved from http://www.nature.com/jcbfm/index.html. doi:10.1097/00004647-199609000-00029

Bloom, H. (2000). *The Global Brain: The Evolution of Mass Mind from the Big Bang to the 21st Century*. New York: John Wiley & Son Inc.

Bloom, H. (2010). *The Genius of the Beast: A Radical Revision of Capitalism*. Amherst, NY: Prometheus Books.

Burns, R. (2004) New York. Boston: PBS Home Video.

Dale, A. (2001). *At The Edge: Sustainable Development in the 21st Century*. Vancouver: UBC Press.

De Landa, M. (1995). Homes: Meshwork or Hierarchy? *http://www.mediamatic.net/article-200.5956.html* Special: Home issue. Retrieved Dec. 4, 2004

De Landa, M. (1997). *A Thousand Years of Nonlinear History*. New York: Zone Books.

De Landa, M. (2006). *A New Philosophy of Society: Assemblage Theory and Social Complexity*. London: Continuum.

Editor. (2008). Brain Cell, The Universe Photographic comparison. *What is Enlightenment?*

Eoyang, G. (1997). *Coping With Chaos: Seven Simple Tools*. Cheyenne, Wyoming: Lagumo Corp.

Eoyang, G. (2007). Seeing and Learning Differently: Asset Building and Complex Change. Minneapolis: Search Institute Webinar Series.

Fourman, M., Reynolds, C., Firus, K., & D'Ulizia, A. (2008). *Online tools for developing Sustainability and Resilience: Methodology, experience and cost effective solutions from MIDIR EU Research Project*. London, UK: European Commission.

GingerGroupCollaborative. (2007). Inquiry Recommendations – Ginger Group Collaborative. Conference Call: Ginger Group Collaborative.

Graves, C. (1974). Human Nature Prepares for a Momentous Leap *The Futurist*.

Gunderson, L. C., & Holling, C. S. (Eds.). (2002). *Panarchy: Understanding Transformations in Human and Natural Systems* Washington, DC: Island Press.

Hameroff, S., Huston, T., & Pitney, J. (2010, April, 2010). Finiding Spirit in the Fabric of Space & Time: An Exploration of Quantum Consciousness. *EnlightenNext, Spring/Summer 2010*.

Hamilton, M. (1999). *The Berkana Community of Conversations: A Study of Leadership Skill Development and Organizational Leadership Practices in a Self-Organizing Online Microworld.* Unpublished doctoral dissertation, Columbia Pacific University, Novato, California.

Hamilton, M. (2003). Integral Community: Lenses, Values and Indicators for Maple Leaf Meme Maps. Unpublished manuscript.

Hamilton, M. (2008). *Integral City: Evolutionary Intelligences for the Human Hive*. Gabriola Island BC: New Society Publishers.

Harris, B. (2007). *Managing Evolutionary Growth: How to Create Deep Change Without Falling Apart*. Beaverton, OR: Centerpointe Research Institute.

IntegralLife (Producer). (2010, May 14, 2010) An Integral Look at Holosync. Realplayer, Powerpoint retrieved from http://s3.amazonaws.com/integral-life-elearning/Holosync/player.html

Laszlo, E. (2004). *Science and the Akashic Field: An Integral Theory of Everything* (2007 ed.). Rochester, Vermont: Inner Traditions.

Lovelock, J. (2009). *The Vanishing Face of Gaia*. New York: Harmony Books.

McTaggart, L. (2001). *The Field: The Quest for the Secret Force of the Universe*. New York: Harper Perennial.

Merry, P. (2009a). Case Study Meshwork 2020 Climate Change Leadership Campaign. Retrieved from Gaiaspace, Meshworking, Private

Merry, P. (2009b). Meshworking for Sustainability. Retrieved from Gaiaspace, Meshworking, Private

Mitchell, E., & Williams, D. (2001). *The Way of the Explorer: An Apollo Astronaut's Journey Through the Material and Mystical Worlds* (2nd ed.). Buenos Aires: Richter Artes Graficas.

Sheldrake, R. (1988). *The Presence of the Past: Morphic Resonance and the Habits of Nature* (1995 ed.). Rochester, Vermont: Park Street Press.

Sheldrake, R. (1999). *Dogs That Know When Their Owners Are Coming Home: And Other Unexplained Powers of Animals*. New York: Three Rivers Press.

Sheldrake, R. (2003). *The Sense of Being Stared At: And Other Aspects of the Extended Mind*. New York: Three Rivers Press.

Wheatley, M. (2006). *Leadership and the New Science: Learning about Organization from an Orderly Universe*. San Francisco: Berrett-Koehler.

Wheatley, M., & Frieze, D. (2006). Using Emergence to Take Social Innovation to Scale. Retrieved from www.margaretwheatley.com

Wilber, K. (1995). *Sex, Ecology and Spirituality: the spirit of evolution*. Boston: Shambhala Publications Inc.

Wilber, K. (2000). *A Theory of Everything*. Boston: Shambhala Publications Inc.

Wilber, K. (2006). *Integral Spirituality*. Boston: Shambhala Publications Inc.

Appendix A: Maps of Integral City (reproduced with permission)

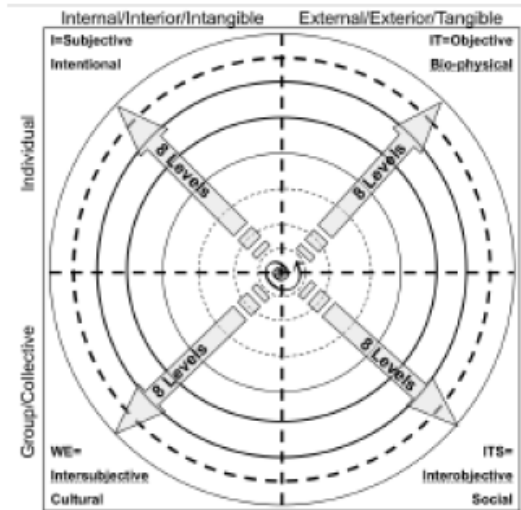**Figure 3.7. Map 1: The integral map. Source: Adapted from Wilber, 1995, 1996a.**
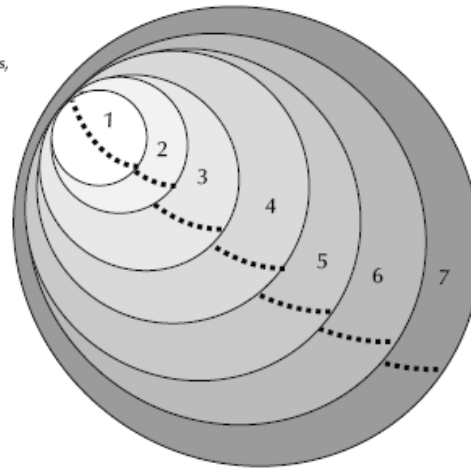

Figure 3.8. Map 2: The nested holarchy of city systems.

- 1 = individual
- 2 = family/clan
- 3 = group/tribe
- 4 = organizations: workplaces, education, healthcare
- 5 = community(s)
- 6 = eco-system/country(s)
- 7 = world

Figure 3.9. Map 3: The scalar fractal relationship of micro, meso, macro human systems.

Figure 3.10. Map 4: The complex adaptive structures of city change.
Source: Beck & Cowan, 1996, Eddy 2003b, 2005.

LEGEND (Beck & Cowan 1996; Eddy 2003b, 2005):
iWn = integral worldview Level n
iSn = integral structure Level n

Appendix B: Author's Developmental Credentials

I offer a filter for recognizing my qualities and capacities as a meshworker. Most of what I have learned about meshworking has occurred in volunteer service in the last twenty years in Abbotsford. It is probably fair to say that each service role has offered me at least one loop through Graves' change map, with alternations between service to hierarchical structures like the Chamber of Commerce and Airport Authority and service to relational communities like the Healthy Community Project, and the Abbotsford Community Foundation and one service to the Western Canada Summer Games that provoked a major paradigm shift (from Orange/Green to Green/Yellow). So I would say it would be fair to observe that as the city has grown, my own leadership capacity has expanded.

My launching pad for meshworking in the last decade came from the dissonance I experienced as VP Volunteers for the Western Canada Summer Games. Out of that experience of complex engagement with a Board of 12 peers, 6000 volunteers, 2000 athletes and 2000 coaches, came a burning question, I could not answer: What comes first? Do leaders develop community? Or does the community develop the leaders? Those questions sent me back to school, where I studied the literature on living systems, complexity, the Integral Model and took the burning question into an online community case study, The Berkana Community of Conversations (synchronistically created by Margaret Wheatley). I emerged from the research understanding the answer to my questions but unable to communicate it to my Abbotsford colleagues, friends or neighbours.

Appendix C: Abbotsford Flower Map
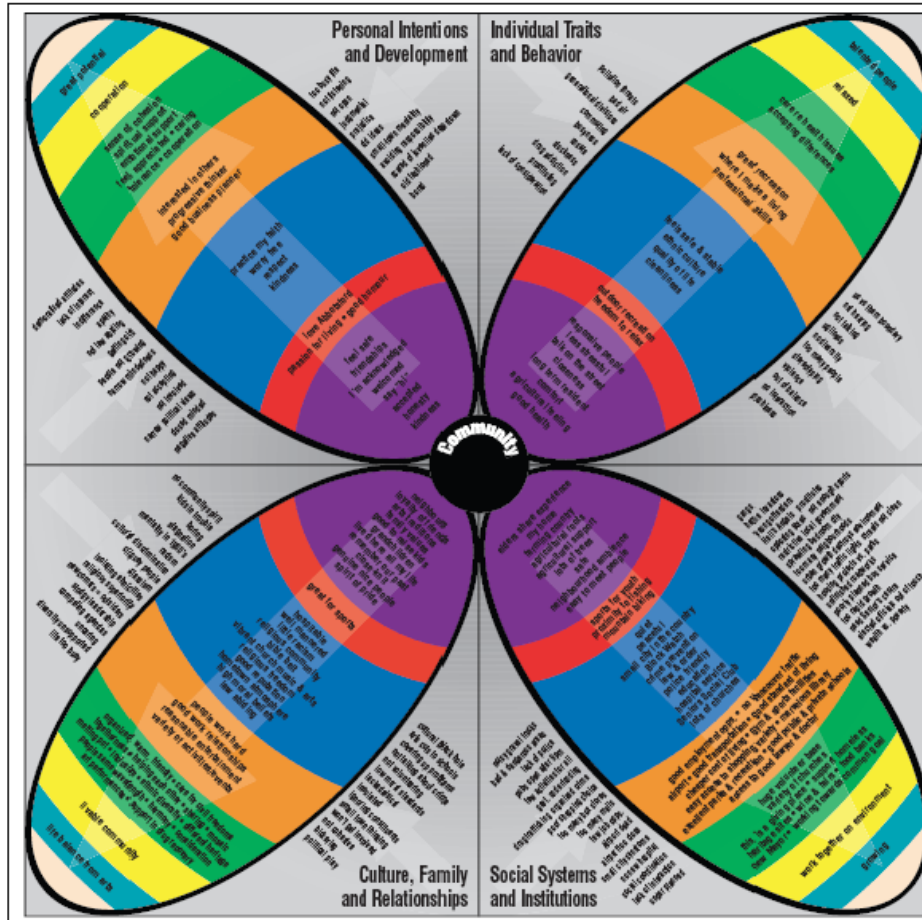
Spiral Flower System Map of Abbotsford
© Marilyn Hamilton, 2003, 2006 www.integralcity.com , TDG Holdings Inc.