Introducing Valence Theory

The Story Thus Far

The *ground* of this thesis postulates that,

> …if the Toronto School's distinctive interpretation of history is indeed valid, then the ways in which people come together, and have come together for collective endeavours throughout the ages, should closely correspond to the nature and effects of the dominant mode of communications at the time.

We then trace the dominant organizational forms of the day from Periclean Athens, through the late Middle Ages, to the early modern form that emerged during the Enlightenment period in Europe, setting the stage for the Industrial Age. In each epoch of primary orality, manuscript-based phonetic literacy, and mechanical print literacy, the fundamental nature and effects of *organization* assumed characteristics analogous to those of the communications mode that, arguably, enabled structuring forces throughout the society. The 20th century – heralded by the earliest incarnations of instantaneous, electric-based communication – proved to be a time of transition from an industrial-influenced paradigm to one that has shifted in response to influences of ubiquitous connectivity and pervasive proximity.

I argue that 20th century organizational discourse can be separated into two parallel streams: one, an extrapolation of the prior era; the other, an emergence of the new. Finally, I demonstrate that those two, distinct discourses inform the attributes, behaviours and characteristics of organizations that I categorize as being either more BAH or more UCaPP in their manifestations among considerations of change, coordination, evaluation, impetus, power dynamics, sense-making, and view of people.

In many respects, BAH and UCaPP organizations could not be more dissimilar. Indeed, if one were to take a prescriptive approach to understanding organizational transition in the early 21st century, such as that assumed by Heckscher and Adler's (2006) edited collection, s/he could be excused for treating BAH and UCaPP organizations as two, distinct species. Perhaps the two types are not as incompatible as fish and fowl. But certainly, one could be forgiven for holding the metaphorical dissimilarity of, say, eagles and ostriches when considering the two, distinct realms of organizational environments.

How, then, to answer the second foundational question of the thesis: is there an over-arching model that can account for both BAH and UCaPP organizations and distinguish between them? One approach is to probe a possible mechanism of action that explains a generalized version of the Toronto School contention, that inventions and innovation of humankind profoundly transform environments of human interaction, and thereby transform humanity.

Bruno Latour (1999) describes the way in which human and nonhuman (that is, the creations of humans) actants – entities capable of action – collectively create a social fabric in which each acquires properties of the other over time. This entwining of characteristics results in the emergence of new actants within a collective, or "an exchange of human and nonhuman properties inside a corporate[1] body" (p. 193). This intertwining, or embedding of characteristics, can perhaps be more easily understood by considering a simple example.

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[1] Although it should be clear from the context, Latour's use of the word, "corporate," should not be confused with the legal fiction that is a business corporation.

Latour directs his readers' attention to the gun-control debate in the United States. The anti-gun advocates maintain that "guns kill people." Pro-gun lobbyists disagree, claiming in a moralistic fashion that "guns don't kill people; people kill people." Latour disagrees with both: he suggests that neither guns, nor people, kill people. Rather, it is a gun-person – a collective of the human person and the nonhuman gun – that kills people. Aside from direct, hand-to-hand, mortal conflict sans weapons, or manual strangulation, a person does not generally kill another person. Neither does the weapon itself kill. It is only when the latent violence of the person, and the effective means of the gun to commit that violence, cross over between the two actants and exchange their unique characteristics, that the ability to kill is mobilized. Indeed, Latour suggests that the original intent of the person may only have been to injure or scare; the creation of the new actant actually interferes with, and changes the intent (1999, p. 178-179).

Over time, humans interact with each other. They may employ nonhuman tools to effect a change in social purpose. In doing so, a new level of "social complication" is created, whereby humans and nonhumans mutually mediate daily interactions. Eventually, a coherent corporate body emerges in which groups of humans are reorganized in their daily activities by nonhuman actants and the resulting networks of power, control, and resistance (Foucault, 1979, 1982). The co-option is subtle, but unmistakeable: when someone is introduced as their function – for example, as the Chair of a department – they have irrevocably inherited nonhuman elements of the corporate collective. Finally, nonhumans are granted full participation in a political ecology, granted political rights, legal standing, and political

representation (Latour, 1999, p. 202-211). The modern-day organization – and particularly, the specific instance of a business corporation – is a clear, if not clichéd, example of Latour's collective of humans and nonhumans.

Each time a new nonhuman actant is introduced into the environment, the existing collectives (and their constituent components) cannot help but be affected as the process of assimilation and entanglement continues. Latour writes, "the modern collective is one in which the relations of humans and nonhumans are so intimate, the transactions so many, the mediations so convoluted, that there is no plausible sense in which artefact, corporate body, and subject can be distinguished" (1999, p. 197).

Certainly, this seems to be the case among the more-BAH organizations that participated in this study. The constituent components of *organization* in these cases appear to be specifically constructed in the service of establishing and preserving the control mechanisms of (nonhuman) systems over (human) people amidst these particular entanglements. Indeed, Max Weber is quite explicit about the nature of the human-machine collective in a BAH organization:

> The purely bureaucratic type of administrative organization – that is, the monocratic variety of bureaucracy – is, from a purely technical point of view, capable of attaining the highest degree of efficiency and is in this sense formally the *most rational known means of exercising authority over human beings*. … The fully developed bureaucratic apparatus *compares with other organizations exactly as does the machine with the non-mechanical modes of production*. Precision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration. (Weber in Miner, p. 391; emphasis added)

BAH-dominant organizations entwine the technologies – or "ways of doing" as expressed by Ursula Franklin (1990) – of bureaucracy, administration, and hierarchy with people to create a relatively new actant, one that was named in 1956, "the organization man" (Whyte, 1956), or as I would now adjust the term, *organization-man*.[2] Citing more contemporary and instrumental examples, Franklin points out that such incarnations are specifically machine-analogous, "control-related technologies, those developments that do not primarily address the process of work with the aim of making it easier, but try to increase control over the operation" (Franklin, 1990, p. 18). The nonhuman aspects of BAH-dominant organizations are:

> Prescriptive technologies [that] eliminate the occasions for decision-making and judgement in general and especially for the making of *principled* decisions. Any goal of the technology is incorporated *a priori* in the design and is not negotiable. … The acculturation to compliance and conformity has … diminished resistance to the programming of people. (Franklin, 1990, p. 25; emphasis in original)

It is not that the introduction of instantaneous communications technologies will somehow magically transform BAH organizations—that should, by now, be evident from the empirical findings of this study. In fact, as both Ahuja and Carley (1999) and Alberts and Hayes (2003) – each cited in an earlier chapter – discover when they examine structures of power and control, technology alone is not sufficient to overcome workers' socialization in traditional hierarchies, particularly when power and privilege are involved. Modern technologies that may streamline information flow

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[2] Although Whyte's landmark book has more to do with the transformation of the American businessman from the clichéd rugged individualist to one that must face a collaborative social ethic in the context of organization (and the resultant conflict with the so-called Protestant work ethic), my usage here retrieves Whyte's cliché in a new form: a Latourian entanglement that creates a new human-nonhuman actant, particularly effected by BAH dynamics.

throughout an otherwise bureaucratic organization do not, in themselves, correct an entrenched, BAH-oriented, cultural conditioning.

Latour specifically characterizes this cultural conditioning as the processes through which nonhumans become a collective with humans. These processes comprise the "crossover, which consists of the exchange of properties among humans and nonhumans," "enrolment" of nonhumans into the collective, "mobilization of nonhumans in the collective … resulting in strange new hybrids," and the particular direction and extent that the new collective takes with its new hybrid actants (1999, p. 194). Thus, we can understand each cultural epoch identified by the Toronto School as a characteristic, Latourian, societal hybridization in which the epoch's dominant communication technology is "enrolled" with humans in their existing institutions – in this case, specifically *organization* – into a collective. The mobilization of the technology's dominant effects imbues humanity with many of its nonhuman characteristics.

In the case of the penultimate epoch – mechanization and industrialization – this enrolment created the BAH-*organization*-man collective. Now, under UCaPP conditions, a new nonhuman (technological) actant is introduced to the collective. Especially because of the particular, dominant, consequences of social networks (de Kerckhove, 1998; Barnes, 2009; Federman, 2008a, 2008b; Gross, 2009; Walther & Ramirez, Jr., 2010) that emerge because of pervasive proximity, the collective is in the process of assuming more humanistic qualities, specifically those that characterize the effects emergent from the pervasive proximity aspects of the UCaPP world—complex, direct and indirect *relationships*.

Indeed, they are relationships, connections, and emergent effects – far more than defined boundaries, production processes, functions, and responsibilities – that seem to be more apropos with respect to considering contemporary *organization*. Margaret Wheatley's 1992 book, *Leadership and the New Science*, provides an inspiration for a new metaphor from contemporary science that serves to capture the essential aspects of human relationships, and more important, their entanglement in the new *organization*-person hybrid:

> Here we sit in the Information Age, besieged by more information than any mind can handle, trying to make sense of the complexity that continues to grow around us. … If the universe *is* nothing more than the invisible workings of information, this could explain why quantum physicists observe connections between particles that transcend space and time, or why our acts of observation change what we see. Information doesn't need to obey the laws of matter and energy; it can assume form or communicate instantaneously anywhere in the information picture of the universe. In organizations, we aren't suffering from information overload just because of technology, and we won't get out from under our information dilemmas just by using more sophisticated information-sorting techniques. We are moving irrevocably into *a new relationship with the creative force of nature*. (Wheatley, 1992, p. 145; emphasis added)

The Creative Force of Nature

In the Niels Bohr model of the atom, electrons orbit around a nucleus in discrete levels or orbitals. There is a limit to the maximum number of electrons in each orbital, with the outermost orbital being incomplete – that is, having fewer than the maximum number – in most elements. Electrons in this outermost orbital can effect various types of chemical bonds with other atoms, and are known as *valence* electrons. In its most simplistic conception, valence bonding occurs when two or more atoms share valence electrons in their respective, uppermost orbitals, thereby creating

mutual connections upon which all of the atoms depend for the creation of the resulting molecular compound.

In an analogous fashion, an individual can consider her- or himself connected to an organization – and vice versa – in a variety of ways. There are often *economic* ties through employment contracts; certainly, even without an explicit employment relationship, value is exchanged between an individual and an organization. In many cases, individuals construct part of their *identity* through self-identification with the organization. Indeed, in contemporary capitalism, some argue that both employees and customers construct identity based on their relationships with organizations (Gee, Hull, Lankshear, 1996; see especially chapter 2). Especially among non-profit or volunteer organizations, there are *socio-psychological* connections that emerge; I argue that these (among other) factors that explain aspects of motivation in the Free/Libre Open Source Software (FLOSS) movement can be applied to general principles of management (Federman, 2006).

These various relationships create *valences*[3] – the capacity to connect, unite, react, or interact – between an individual and *organization*. Ordinary experience would suggest that valences have complex relationships among themselves – one's interactions with an organization are rarely uncomplicated and unitary, save in the most instrumental and limited of circumstances. The strength of a given valence

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[3] My use of valence should not be confused with Victor Vroom's (1967) usage of the same word in his Expectation-Valence Theory of motivation. Vroom uses the word, valence, to be synonymous with relevance or value when explaining that employee rewards for particular tasks, to be motivating, must fill an employee need (value or "valence"), and be commensurate with the task that itself must be achievable (expectation).

connection likely changes over time: for example, a person might be very active as a volunteer during a particular campaign (representing a strong Socio-psychological valence, perhaps) and then limit her involvement thereafter, thereby weakening the valence connection. A full-time employee might enjoy strong Economic- and Identity-valence connections; during a layoff, the Economic valence might weaken more than the Identity valence. Unionized workers would likely have dual Identity valences that sometimes form "double bonds" (reinforcing self-identification with both union and company), and sometimes work in opposite directions, as during labour negotiations or strikes when the union-Identity valence might work to negate the employer-Identity valence.

Since individual-to-*organization* valence bonds can shift in intensity, type, and pervasiveness among individuals and over time, *organization* conceived in terms of its relationships, or valence connections, with its members is consequently contingent. For example, consider a non-trivial organization like a university. At its core are full-time faculty and staff, and enrolled degree students, all of whom enjoy mutual Economic- and Identity-valence bonds with the institution—and likely others, but two will suffice for illustration. Part-time faculty and students have the same types of valence bonds with the university, but neither bond is as strong as that of the university's core constituents. Alumni, too, have Economic and Identity bonds, but the quality and nature of their bonds with the university are different from those of both the core group and the part-timers.

In terms of relationships, then, what defines the university? The answer is interestingly and necessarily contingent, uncertain, and complex, consistent with

much else in the contemporary world: it depends. It depends on the temporal, spatial, material, and other contexts in which the question makes sense; but, I contend that the university – indeed any organization – *can be precisely defined by the types, strengths, and extents of the valence bonds under consideration*. Like water that has three states – solid, liquid, and gas – the university analogously can exist in the same three states: solid (core constituency), liquid (core plus the more fluid part-timers), and gas (core, part-timers, plus the often evanescent alumni).

Unlike traditional contingency theories of organization that I discussed in an earlier chapter, the contingent construction of any organization when considered from the ground of its valence connections considers the multiplicity of its relationships, and the nature, quality, and extent of those relationships' effects, to define what now becomes *organization* as an emergent and continually evolving form.

When one moves beyond individual-*organization* relationships, it is equally clear that the same sorts of relationship valences can exist among discrete organizations (if indeed the notion of a "discrete organization" retains a useful meaning), both directly and indirectly, as in the case of Castells's (1996) network enterprise. The same complex multiplicity of relationships and effects define inter- and intra-organizational forms, again, as emergent actants. This observation leads to a recursive, redefinition of *organization*:

> *Organization* is that emergent entity resulting from two or more individuals, or two or more organizations, or both, that share multiple valence relationships at particular strengths, with particular pervasiveness, among its component elements at any point in time.

I propose five, distinct valence relationships that each involve a form of connection via exchange—tangible or intangible. These are: Economic, Knowledge, Identity, Socio-psychological, and Ecological. There may be additional valence relationships that are distinct, that is, cannot be derived from this set of five; additionally, there may be another set of valence relationships that are orthogonal to the set I propose. It is not my intention to claim enumeration of a uniquely exclusive and definitive set of inter-actant relationships that enable emergence of *organization*. Rather, I contend that this set is sufficient to account for organizational behaviours observed in the empirical findings of this study, and useful to provide guidance to organizational members beyond that afforded by conventional management discourses.

The Five Valence Relationships

Economic (Value Exchange) Valence

Clearly the most obvious and historically dominant connection among organization members, the Economic-valence relationship lies at the heart of both modern and ancient[4] organizational discourse. All participants speak to the value they individually contribute to their respective organizations, and each is explicitly cognizant of the economic ramifications of those contributions in the context of their specific organization. Interestingly, at the extreme ends of the BAH-UCaPP spectrum,

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[4] See, for example, Cummings and Brocklesby's (1993) description of the composition of ancient Athenian *phylei*, that were specifically designed to balance economic exchanges among rural, urban, and coastal *demes*.

the directional Economic-valence connection from organization to individual seems to be largely independent of the individual's contribution to the organization (that is, the connection from individual to organization). Stan, from Organization M, describes this as a dysfunction of the union's presence (Stan-1-67; also Frank-2-52 regarding Organization A); Inter Pares's Sam frames this as decoupling compensation from responsibility as part of their explicit "analysis of power" (Sam-1-97). Analogously, both Organization A and Unit 7 – each situated on either side, and more towards the centre, of the spectrum – create an explicit reciprocity in the Economic-valence relationships between members and the organization—more along the lines of the iconic expression, receiving value for money.

It is important to note that, in general, the Economic valence is not defined in terms of an organization specifically providing money for services rendered by its members, or vice versa. Nonetheless, Economic valence expresses a tangibility, reification, or performativity on the part of members (individuals and component organizations) and *organization* itself. Thus, in addition to services or production exchanged for money, Economic valence could also be enacted by means of explicit demonstrations of *being valued*, as in the case of Unit 7's inclusiveness of relatively junior members in key, strategic, organizational deliberations. I will expand on this idea later in this chapter.

Despite relatively recent approaches such as Balanced Scorecard (Kaplan & Norton, 1996; Maltz, Shenhar, & Reilly, 2003) and Triple Bottom Line (Elkington, 1997; Hacking & Guthrie, 2008), the Economic valence tends to dominate

organizational considerations, particularly in modern-to-contemporary discourse[5].

This discursive dominance often results in other valence connections being

subordinated, conflated, and expressed in economic terms. Thus, one advantage of a

Valence Theory analysis is that it can provide a fundamentally balanced approach to

the foundational relationships that bind organizational members.

Knowledge Valence

Peter Drucker can be credited (if not blamed) for reframing knowledge as a

production commodity through his popularization of the term, "knowledge economy."

He characterizes "knowledge industries[6]" as those that "produce and distribute ideas

and information rather than goods and services," noting that America had "changed

into a knowledge economy" since World War II (1969, p. 263). He goes on to

describe how,

> …knowledge has become the central "production factor" in an
> advanced, developed economy. … Knowledge has actually become the
> "primary" [i.e., resource production akin to agriculture, mining,
> forestry, and farming] industry, the industry that supplies to the
> economy the essential and central resource of production. …
> Knowledge is now the main cost, the main investment, and the main
> product of the advanced economy… (Drucker, 1969, p. 264)

It is therefore not surprising that, over the ensuing four decades, knowledge

has acquired a connotation of "property" (as in, "intellectual property"), and is often

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[5] For an acknowledgement of this claim, and interesting responses to its perceived deleterious effects, see Unerman and O'Dwyer (2007), and Harvey (2007). In the former article, the authors identify the risks incurred when direct economic considerations dominate; in the latter, the author describes how the economic discursive dominance contributes to dismantling egalitarian societal institutions.

[6] Drucker attributes the term, "knowledge industries," to Princeton economist, Fritz Machlup's 1962 book, *Production and Distribution of Knowledge in the United States*.

considered as much an economic commodity as are iron, coal, or timber. Unlike those commodities, of course, knowledge is inherently non-rivalrous – unless artificially constructed as such, as in the case of Organization A – and non-excludable—with a similar proviso. In fact, its action is quite the opposite: the more one shares the knowledge in one's possession, the more new knowledge can be produced by others for the benefit of all[7].

Nonetheless, individuals construct their connections to the organizations of which they are members, in part, by contributing and receiving skills, expertise, information, experiences, opportunities—all aspects of both tacit and explicit knowledge. Nonaka, together with numerous co-authors, describes the organization as the *place* – actually, various sites or locales – in which knowledge is socialized (converted from tacit to tacit among individuals), externalized (tacit to explicit), combined (explicit to more complex explicit), and internalized (explicit to tacit) (Nonaka & Konno, 1998; Nonaka & Takeuchi, 1995; Nonaka, Toyama, & Konno, 2000). I will return to the idea of the *place* of knowledge, shortly.

Identity Valence

Ashforth (2001) crosses two theories of role performance and argues that, "the salience of a role identity to an individual in an organizational context is determined by both … subjective importance and situational relevance" (p. 29). Subjectively, "the

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[7] Consequently, a so-called knowledge economy should be, more or less, counter-capitalist in support of the traditional construct of the commons. There is considerable discourse concerning various approaches to a knowledge commons, with nodes in the FLOSS, Creative Commons, and Open Access movements, among others.

greater importance one attaches to a given identity the more weight it carries in determining one's global sense of self" (p. 30). That is, people become vested in their personally assessed, *subjective importance* of a role based on a feeling of obligation and normative values expectations associated with a sense of belonging or membership in the context of a particular social group or role category. For instance, a manager or director role tends to have a greater perceived importance ascribed to it than, say, the role of retail worker or clerical staff. As well, that subjective assessment is influenced by a variety of associated extrinsic motivating factors, such as reward, recognition, status, and reputation.

Additionally, Ashforth identifies that a particular role enactment becomes *situationally relevant* by virtue of the "degree to which a given identity is socially appropriate to a given situation (i.e., a specific context, setting, or encounter). By socially appropriate, I mean that the identity would be considered by others to be legitimately applicable to the situation" (2001, p. 32). Jean, at Inter Pares, explicitly recognizes the difference between speaking in role identity as opposed to expressing her personal opinion:

> As a manager, I would say something different than I would say as Jean.
> And, as a manager out there, I'm careful to remember that it's not me
> that I'm representing, although it's also me because I'm part of this
> institution, but it is the institution. (Jean-1-53)

When these distinctions remain sublimated – when the individual cannot clearly distinguish among the role, the organization, and the self – decisions, approaches, and consequential actions sometimes become problematic. This can occur when an individual tacitly accepts ascribed behaviours that may situationally

accompany the assumed identity associated with a role. However, it is not necessarily the case that identity is passively accepted and worn by those who enrobe themselves with a particular role. In many cases, according to Peter Callero (1994), roles are embodied as "tools in the establishment of social structure… and that human agency is facilitated and expressed through the use of roles as resources" (p. 229). Baker and Faulkner (1991) further argue that, rather than an individual's role being the manifest consequence of a social position, roles are claimed and enacted *prior* to becoming located as a social position, and thereby serve to establish that position within a social network.

Collier and Collero go on to extend the constructive nature of role as cultural objects – meaningful and structuring with respect to interactions – suggesting that roles comprise cognitive schemata,

> …that individuals use to understand and act in their culture…
> However, when roles are employed as resources for the construction of
> identity, the same cultural schemata serve to organize the self. … These
> role-identities are then used to enable a wide range of individual and
> collective acts" (Collier & Callero, 2005, p. 55)

In other words, roles connect behaviours and individual construction of social position as important in the development of social identity within a particular social network. Thus, one's Identity-valence connection to an organization often fulfils an additional capacity than merely to (passively) identify an individual's social standing, status, and attributed capability—one's bureaucratic fitness for office, so to speak. Identity valence can additionally bolster social capital, both for the individual and for the organization to which the individual is connected (Oh, Chung, & Labianca, 2004).

Socio-psychological Valence

In the context of understanding the motivation behind peer-production in large-scale, commons-based software endeavours[8], Yochai Benkler identifies what he calls,

> …*social-psychological rewards*, which are a function of the cultural meaning associated with the act [of contributing to an open source software project, for instance] and may take the form of actual effect on social associations and status perception by others, or on internal satisfaction from one's social relations or the culturally determined meaning of one's action. (Benkler, 2002, p. 426-427; emphasis in original)

In Benkler's analysis, social-psychological rewards can both offset direct, economic remuneration and be mitigated by financial exchange[9]. As a mode of connection with an organization, Socio-psychological valence creates one's affective connection and comprises, if not the source of both extrinsic and intrinsic motivation, then their manifestation and means of action in the individual (Federman, 2005b). Additionally, it enables people to compensate, or at least self-justify or rationalize, otherwise unsavoury behaviours on the part of the (larger) organization. If there is a strong Socio-psychological-valence connection to a smaller, sub-organization like a department, workgroup, or team, individuals are able to compensate for more unpleasant or demotivating aspects of the general work environment. Organization A's Roxanne, for example, describes "creating an environment, and putting some value

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[8] For example, those that produced the Linux operating system, the Firefox browser, and other, similar, FLOSS projects.

[9] For example, a person of a particular social class with a reasonable income may volunteer to serve at a soup kitchen, but may not choose to accept employment there. As a volunteer, SP reward is positive; as an employee, SP reward may be perceived as negative.

in the job connecting people together and get[ting] connected to people, and that is the part of that I enjoy and it's very pleasant for me" (Roxanne-2-58).

The importance of affective connection for group cohesiveness and effectiveness is the specific object of study for Oh, Chung, and Labianca (2004), mentioned earlier. Additionally, Casciaro and Lobo (2005) report on an extensive study of mostly ad-hoc, voluntary work relationships in which affective connections in the emergent workgroups prove to be more important than job competency in individual self-selection of work-mates. These results are consistent with those of Nardi, Whittaker, and Schwartz (2000, 2002) who demonstrate that, among other things, individuals will reconnect and reconstruct *organization* with those who have provided favourable experiences in the past.

It is clear that there is a complex entanglement among all of the aforementioned valences that is, perhaps, most easily demonstrated via the Socio-psychological valence. A person will likely feel a strong, positive, affective connection to her/his organization if s/he has a well-paying job (Economic), with a relatively high-status title (Identity), that both is challenging and provides great opportunities (Knowledge). Change the Knowledge-valence component, as in the case of Japanese *madogiwazoku* – literally, "the tribe (group) that is beside the window[10]" – and the individual's organizational connection is broken (Hideharu & Hideharu, 1999).

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[10] As a form of constructive dismissal, long-time organizational members in large, Japanese firms who are deemed past their prime, or are being organizationally punished, are given an office with a large window, but no responsibilities. They spend their days gazing out the window, hence the colloquial form, "window gazers." It is a sign of significant loss of respect, and represents tremendous shame for the employee and his – in the culture, *madogiwazoku* are almost always male – family.

Alternatively, alter the construction of status and rank (Identity), as happened in Unit 7, and again, the employee may choose to sever their organizational connection (e.g., Roger-1-189). And, assuming a reasonable fluidity in the employment market, it is not unknown for employees to change employers for a better income, especially if the individual links financial worth with self-worth.

Conversely, Rowena Barrett (2004) reports on how, in some circumstances, Knowledge connections trump more tangible, Economic connections among workers in Australia's software industry. And, it is very common for a prominent individual to assume a "$1-per-year" position as the head of a charitable endeavour, creating their organizational connection through both Identity- and Socio-psychological-valence connections.

These examples are not meant to be definitive. Rather, they illustrate that Valence Theory considers *organization* to be an entity emergent from amidst complex interactions of the various valence relationships among its members; that unlike a more linear, deterministic model, valence relationships cannot be considered to be so-called independent variables.

Ecological Valence

In the late 1980s, the World Commission on Environment and Development framed a definition of sustainable development (WCED, 1987), one that became widely accepted within the ground of a scientifically and industrially dominated (neo-classical) economic paradigm. This model is predicated on an industrial process conception of organizations, and consequential production models of interaction,

mutual dependence, supply and consumption, functional decomposition, and utility value of natural resources. For writers like Herman Daly (2002), the opportunity was lost to engage in discourse concerning the overall objectives of sustainable development; what emerged was merely an ongoing debate about the process of achieving industrial-economic goals. Fergus and Rowney lament,

> The opportunities to achieve this type of discourse will only come about once our epistemological thought stance changes. … we do believe that the processes of developing those changes need … a foundational ethic of value, where the measure of value is in terms of social, environmental, and economic values, as opposed to a blinkered domination of economic values. (Fergus & Rowney, 2005, p. 200)

They conclude their argument by reiterating the prevalence of the economic-dominant paradigm within which businesses exist, and the near impossibility to change the nature of sustainable development discourse by those operating within that ground. They call for a fundamental change in the "cognitive reality" in which business managers exist, integrating "various values, ethics and perspectives during the process of decision making" (Fergus & Rowney, 2005, p. 205). To accomplish this, they suggest that business managers "will encourage employees to view the organization as embedded in a larger society and, in turn, *both these organizations and society are embedded within the natural environment*" (p. 205; emphasis added).

This final observation by Fergus and Rowney provides an important additional consideration for the proposed Valence Theory: the environment itself is an important actant in the *organization* collective. This is especially true – and in retrospect, perhaps even obvious – when one considers the particular instance of the UCaPP *organization*.

After all, to what is humanity more ubiquitously connected and pervasively proximate than the natural environment?

Moreover, the natural environment can be considered to be a foundational, ground actant. When two individuals come together to form what one might consider to be a proto-organization by establishing various valence relationships between them, they do not do so in the void of outer space. The natural (and sometimes unnatural, as in an urban setting) environment is always present. Further, it continually and perpetually contextualizes the nature and scope of members' interactions, regardless of how many additional members – be they individuals or other organizations – may join.

Under an industrial paradigm, and consistent with the instrumental ground that originally contextualized the BAH *organization*, the natural environment is rarely acknowledged except as an externality or, at best, as an adjunct consideration to the instrumental image-marketing operations of the business (Laufer, 2003; Ramus & Montiel, 2005). In a Valence Theory conception, considering the natural environment as a foundational actant suggests that the fundamental ground valence of any and all instances of *organization* is an Ecological-valence relationship whose importance is no less than that of any other valence-relationship consideration.

The nature of Ecological valence[11]

An organization's relationship to the natural environment can usefully be characterized as its sustainability—the net degree to which it utilizes natural capital. Daly (2002, 2004; also Daly & Cobb, 1994) describes two definitions of sustainability. Utility-based sustainability is consistent with that of the Brundtland Commission (WCED, 1987), namely, sustaining a level of resource usage that presumably meets the needs of the current population such that future generations will be able to meet their own needs. Daly points out two major limitations in the utility-based definition: first, utility to meet current needs is not measurable; second, the definition imposes today's conception of "needs" on future generations without acknowledging the socially contextualized, not to mention political, nature of need. What *is* clear is the industrial-context mentality that informs the Brundtland definition—a mentality that is consistent with the prior cultural epoch rather than the UCaPP nature of the contemporary world.

Instead, Daly favours a throughput-based construct of sustainability specifying that "the entropic physical flow from nature's sources through the economy and back to nature's sinks, is to be non-declining" (2002, p. 1). Throughput can be measured as the amount of energy consumed by all physical entities, both human and non-human,

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[11] The empirical study upon which this thesis is based specifically investigated the nature of interpersonal relationships that are encompassed in the other four valence relationships. In that sense, Ecological valence is a "theoretical" construct, but one that, in my view, is critically important in a UCaPP world faced with contemporary realities of climate change, depletion of habitat, and over-consumption of natural resources. As the later discussion will include relatively little concerning Ecological valence, I am choosing to briefly explore its nature here, noting that there is considerable opportunity for future research in this area. This section acknowledges the inspiration of Prof. Laurent Leduc, whose course, *Corporate Ethics in the Global Economy*, informed my original conception of Ecological valence.

on earth. All energy originates in nature, is transformed multiple times through various industrial, agricultural and other processes, and then ultimately reverts to nature. Daly's definition specifies that the amount of energy actually "consumed" by entities on the planet – that is, not returned to nature via consumption of non-renewable resources or production of non-decomposable waste – should be limited so that all other energy flows are at least maintained, if not increased. Thus, one possibility is that Ecological valence could be measured in terms of net energy exchange between an organization and the natural environment via a complex network of interactions and transformations.

In general, ecological, environmental, and sustainability considerations represent a relatively recent set of concerns in the contexts of both modern and contemporary *organization*, compared to the concerns manifest in the other four valence relationships that are literally centuries old. Hence, there is yet considerable opportunity to problematize and frame the issues that may lead to an even more appropriate and useful specification of Ecological valence, associated empirical investigations, and models of praxis consistent with UCaPP *organization*.

The Problem of Knowledge, and the Two Valence Forms

When framed as "the main cost, the main investment, the main product of the advanced economy" (Drucker, 1969, p. 264), it is quite understandable how knowledge became commodified—simultaneously a "natural" resource and a finished, economic good. In that sense, one could question whether, in the context of a so-called knowledge economy, the Knowledge valence should be distinct or included as a

component of Economic valence, representing both a contemporary commodity and medium of value exchange. Individuals contribute their experience, education, skills, and capabilities to an organization, often in direct exchange for financial remuneration—your coin for what I know. For those framed as knowledge workers – including all of the participants in this research study – knowledge is their stock-in-trade, no different from the value provided by the bricklayer in constructing a wall, the lumberjack in felling trees, or the farmer in reaping the fruits of his/her harvest.

There is, of course, a fundamental *difference in kind* that the contemporary world, and especially the Drucker-inspired discourse of knowledge economy, has attempted to convert to a mere *difference in extent*. Reifying intangible, non-rivalrous, and intrinsically non-excludable knowledge into a near-tangible, tradable commodity is consistent with an industrially oriented mentality. In other words, Drucker's original framing is problematic relative to a context that reads history as epochal transformations enabled by quantum innovations in the dominant mode of communication and interpersonal engagement. It attempts to characterize one of the dominant, transformative aspects of the contemporary world – the instantaneous, multi-way exchange of knowledge – in Industrial Age-cum-modernist terms. Knowledge as a commodified medium of value exchange is consistent with the prior epoch; Knowledge valence conflated with Economic valence is inherently a construct that reinforces the dominance of economic considerations over any other.

How *else* can we understand the nature of knowledge and the Knowledge valence? Nonaka Ikujiro, together with numerous collaborators, introduce Nishida's concept of *basho* (expressed in its suffix form, *ba*) to describe the,

> …shared context in motion in which knowledge is created, shared, and utilized (Nonaka, Toyama, and Konno, 2000). *Ba* is the context shared by those who interact with each other, a process through which the context itself evolves through a self-transcending process of knowledge creation. … Knowledge emerges out of *ba*. (Nonaka, Toyama, & Scharmer, 2001)

According to Nonaka, the processes of knowledge socialization, externalization, combination, and internalization occur in the context created by *ba* (Nonaka & Konno, 1998; Nonaka, Toyama, and Konno, 2000; Nonaka, Toyama, & Scharmer, 2001) in a way that is neither transactional nor strictly instrumental. Rather, these processes represent a continual flow and transformation of knowledge through social, psychological, cognitive, and spiritual places in an organization. In his adaptation of Nishida's philosophy, knowledge originates in, and mutually determines, *ba*, and the "firm is a constantly unfolding organic configuration of *ba*" (Nonaka, Toyama, & Scharmer, 2001, n.p.).

Although I do not agree that an organization is exclusively, or even primarily, determined by knowledge – a conceptual artefact of the knowledge economy discourse – Nonaka's adaptation of Nishida's philosophy provides useful guidance into the dual nature of knowledge, and specifically, the Knowledge-valence relationship. From Drucker, there is an instrumental, transactional, and tradable aspect to knowledge. This is knowledge as both resource and good, with a clear, economic connotation. On the other hand, from Nonaka, there is "a physical, a relational, and a spiritual dimension" (Nonaka, Toyama, & Scharmer, 2001, n.p.) to knowledge. This is knowledge that creates a common sensibility, a common understanding of *place* and contextual circumstances, and a common volition to action among organizational

members. The former I call "fungible[12] Knowledge (*f*-Knowledge); the latter, Knowledge-*ba*.

Both forms can be seen among the empirical findings of this study. In Organization A, for example, Adam describes the importance of individuals' Knowledge-valence connections to the organization in the aftermath of a merger: "What's noticeable is that we have all sorts of folks that you weren't aware of that they had particular association with certain things that suddenly claim to have that association" (Adam-1-48). This reaction among people whose jobs are suddenly placed in jeopardy can be understood as a survival response in the context of an organization that simultaneously claims to value *f*-Knowledge-valence relationships, and artificially imposes an arbitrary limit on the quantity of *f*-Knowledge-valence relationships that it will support, through its focus on "reducing redundancies."

(Re-)creating knowledge as a rivalrous resource correspondingly creates a disruption in information flow that restricts the ability to get the job done, as Adam describes: "Information is not flowing, and for us that … becomes an issue, because information that's needed to make decisions and recommendations and plans becomes fragmented, and becomes twisted by the interests of the supplier of the information" (Adam-1-52). Irrespective of one of Fayol's (1949) basic principles of BAH management, that business concerns should take precedence over individual concerns, when fungible valence relationships are recreated as rivalrous and limited, personal concerns (like survival) far outweigh concerns of the enterprise.

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[12] The connotation of the word, fungible, is that it is tradable or negotiable in kind, or interchangeable for an equivalence of the same, or similar, commodity.

In the case of *f*-Knowledge in Organization A, for example, information stops flowing at times when people see opportunity to either advance, survive, or protect territory. Information possession and control becomes a very valuable commodity and asset to be hoarded in times of uncertainty. Knowledge is not only power; in an interesting reversal, it can also become the governor that limits that which powers the organization. In the discursive context of the knowledge economy – within a relatively more BAH environment – Knowledge- and Economic-valence relationships may become conflated: *f*-Knowledge becomes a rivalrous resource when organization members perceive that Economic dominance is equivalent to exclusivity of *f*-Knowledge.

In Inter Pares, the multiple venues in which knowledge is "socialized" are more than merely instrumental means through which information dissemination occurs. Regular program meetings and all-staff meetings – the two, primary governing bodies of the organization – create Knowledge-*ba* relationships among all members, and the organization itself. Instrumentally, "it makes the wheels turn easier, so you don't have to come up with fifteen administrative checks and balances, and have somebody look over your shoulder as you're trying to make every decision which, actually, is a waste of energy" (Jean-1-54). It also enables Inter Pares's amazing ability to permit every member to commit the organization to a course of action with external constituencies. Each person shares the common context, a common sensibility, and a common volition to action. Simply put, Knowledge-*ba* creates a circumstance in which everyone *just knows what to do*.

Loreen expresses some of her perceived distinction between *f*-Knowledge and Knowledge-*ba* in describing Unit 7's culture of inquiry, differentiating between checking-up and checking-in. She describes how an employee, hired for their expertise and knowledge may feel considerable discomfort in asking "content-related" questions. If one is paid to know – that is, compensated for their *f*-Knowledge – they had better know what they claim. If a senior member of the organization or a client questions that employee, it is often based in the employee being asked to either demonstrate their *f*-Knowledge (that is, their value to the organization), or justify the adequacy of their performance (checking-up). In a *f*-Knowledge organization, the space of inquiry is perceived as unsafe: "questions weren't a comfortable place to live … it isn't a natural place to want to be in terms of feeling confident" (Loreen-2-102).

However, in a Knowledge-*ba* environment, inquiry is the mechanism used to create that Knowledge-*ba* in the first place. Opening space for an "expert's" own inquiry by inviting *place* for the not-yet-known is a path to creativity and innovation. Thus, the leader's role shifts from directing work to encouraging appropriate inquiry and discovery, a role that both requires and creates Knowledge-*ba*, quite consistent with the contention of Nonaka, Toyama, and Konno (2000).

The question now arises: if there are both fungible and *ba* forms of the Knowledge-valence relationship, is there an equivalent duality for each of the other valences? The answer, as one might now expect, is unequivocally, yes. For each valence relationship, the fungible form is more instrumental and transactional. In all cases, the fungible-form valence relationships can be conflated with economic

considerations, be it with respect to extrinsic motivation[13] (*f*-Socio-psychological), job titles (*f*-Identity), direct compensation (*f*-Economic), or externalizing waste products in pollution (*f*-Ecological).

Conversely, the *ba*-form valence relationships are environmental—they permeate the organization creating the types of commonality among members that manifest in Inter Pares's collaborative management style, the tremendous success of Unit 7's B-Roll Diabetes Initiative, and my department's accomplishment of a remarkable number of projects for which no one supposedly had time. It is the source of intrinsic motivation (Socio-psychological-*ba*), constructing one's sense of organizational self in referent[14] terms (Identity-*ba*), having a demonstrable sense of how one is valued by the organization (Economic-*ba*), and reflecting the organization's collective engagement with public space and the physical environment (Ecological-*ba*).

As I will demonstrate in more detail in the next chapter, BAH organizations tend to emerge when fungible-form valence relationships predominate; UCaPP organizations emerge from *ba*-form relationships. As the *ba*-form relationships become more pervasive throughout an organization, and interact with more complexity among the members, a greater sense of collaborative community, with common sensibility, appreciation of context, and volition to action develops. This unity and coherence I describe as "organization-*ba*," a pervasive, encompassing *basho* that is a crucial, if not

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[13] These specifications of the *f*- and *ba*-forms of the valence relationships are meant to be examples only, and not exclusive and definitive.

[14] For example, as a referent leader.

determining, emergent property of UCaPP organizations. The connection to Adler and Heckscher's description of collaborative community becomes clear if organization-*ba* is construed as Weber's suggested "value rationality." In this, an environment of organization-*ba* becomes the enabling cause that yields "contribution to the collective purpose, and contributions to the success of others" (Adler & Heckscher, 2006, p. 39).

In an earlier chapter, I described how Inter Pares creates its form of coalition with partner organizations worldwide:

> Follow the relationships. So follow the *place in the centre* where both we feel that we can engage and we can contribute, and the people with whom we are building the relationship also feel that they can *participate in this relationship, and they'll get something out of it*, and it will be *useful in the context* in which they're working. (Jean-1-3; emphasis added)

In Valence Theory terms, Jean's formula describes participating in mutual exchange relationships that will connect Inter Pares with a potential coalition partner—in other words, creating various valence relationships. Additionally, she describes "the place in the centre" – *basho* – in which both will engage and find common context. Juxtaposing and connecting Inter Pares's organizational context with that of the potential partner create a relationship that will be "useful in the context in which *they're* working," rather than, say, forcing the partner to adopt Inter Pares's worldview and approaches. The two organizations come together to forge new valence relationship bonds, thereby creating a new, emergent organization in what otherwise might be called a meeting of minds. The unity and coherence that are simultaneously created is organization-*ba*—literally, the *place* (*basho*) of the new organization in the generative sense suggested in Nishida's (1933/1970) original work.

The farther an organization is towards the UCaPP end of a hypothetical, BAH-UCaPP spectrum, the stronger is the corresponding sense of organization-*ba*. Members of UCaPP organizations are multiply interconnected and mutually engaged as a way of being. In contrast, we have seen that the more BAH an organization becomes, the more fragmented, separated, and instrumentally or transactionally connected are the members—even within themselves, as reported by all participants from Organization M. Drawing from this extreme, BAH case among the research participants, Organization M suggests that bureaucracy, administrative controls, and hierarchy may tend to ossify an organization by interfering with the complex interactions among valence relationships. Strong organization-*ba* indicates the degree to which valence relationships are able to interact with each other in complex ways within individuals, and how that complexity is expressed via the valence connections among organization members themselves[15].

*Effecti*ve Theory

In an earlier chapter, I describe how Inter Pares considers the issue of scaling and growth, and suggest this comparison between BAH and UCaPP organizations:

> With BAH organizations, *effectiveness* is measured in terms of owned or controlled resources that are deployed in the pursuit of defined objectives and goals. UCaPP organizations, it seems, feel a lesser need to control or own the means – including people – that enable the

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[15] "Testing" this proposition among participants via my weblog (Federman, 2005-2010, post of June 11, 2008) resulted in responses suggesting the following: the siloed nature of one of the BAH organizations precluded interactions among *f*-Knowledge and other valences; Tayloristic specialization even within individuals, interfered with connections among *f*-Economic, *f*-Socio-psychological, and *f*-Knowledge; and that "this concept explains why I feel so brutalized by work and school—I am simply not allowed to be my whole self in a BAH organization."

creation and dissemination of its intended *effects* which are based in shared values and participation in common cause.

In a contemporary context, it is appropriate to question whether the traditional construction of organizational effectiveness – having to do with access and deployment of resources, or achievement of stated goals and objectives, or combinations of both – provides the most useful guidance for a UCaPP world. One could construct a cogent and legitimate argument that critiques striving for such effectiveness constructs, writ large in the context of organizations, economies, and nations; writ small in the context of individuals seeking what they – rightly or wrongly – consider to be their personal due.

An extreme focus on instrumentality and achieving unitary objectives, often to the exclusion of other – and others' – considerations, has perennially been critiqued for sowing the seeds of near economic collapse (e.g., Bakan, 2004; McLean & Elkind, 2003) and seemingly inevitable ecological deterioration and catastrophe (e.g., Liotta & Shearer, 2007; Lovelock, 2006) that threaten order, stability, and perhaps civilization's ability to sustain itself. Proposing Valence Theory – a contemporary reconception of the fundamental premise upon which organizations are constructed – necessitates proposing a corresponding change in our collective understanding of what it means to be effective.

Simply put, in a world that is ubiquitously connected and therefore pervasively proximate, to be truly, if not literally, *effective* is to be cognizant of the effects one intends to create, and actively aware of the multiple, complex effects that one actually brings about in both the social and material – natural and physically constructed –

environments[16]. As effects are substantially distinct from goals and outcomes, an organization concerned first and foremost with its effects must bring a heightened awareness amidst the social and material environments in which it participates among its various and varied constituencies. This logic brings an organization to having as its primary concern, the relationships it creates, out of which intended effects emerge, followed by the goals, objectives, and outcomes towards which it strives.

Such a progression of attention priorities – from a primary focus on relationships to secondarily on effects and only then to goals – is, for conventional organizations and their leaders, not only counter-intuitive, but backwards— completely reversed from the "normal" order of organizational causality. However, in the UCaPP world, causality framed as Newtonian "action-reaction" provides only a superficial model, describing the most simplistic of human transactions. As I describe elsewhere, the UCaPP world is best understood in terms of connection, context, and complexity:

> *Connection matters*, because it is precisely the ubiquitously connected world that has created the acceleration in communication that is driving contemporary society through this nexus period, bursting through the break boundary, and onto the other side that we now inhabit: once we have changed, we cannot unchange. Ubiquitous connectivity creates the effect of pervasive proximity, and that means context matters.

> *Context matters* because in a UCaPP world, diverse contexts are brought into proximity and are able to interact in ways that were implausible one hundred years ago, and certainly were impossible before that. But many of these contexts often seem to be inconsistent with one another. They might appear to be paradoxical, antithetical or even contradictory

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[16] I would happily include psychological and spiritual environments as well in an admonition to active, mindful awareness. However, this call for organizations to develop an active awareness of complex manifestations should be both a sufficient challenge, and a necessary restorative for the next generation (or two) of organizational philosophers and practitioners.

when brought into immediate proximity with each other. This means, complexity matters.

Complexity matters because making sense of these multiple, overlapping contexts necessitates an analytical frame that is different from the traditional deterministic, sequentially causal, dialectical methods that have dominated the academy since the 17th century. Actions that occur in any context are far from isolated in their effects in a global system that is massively interconnected in networks that create multiple feedback and feedforward loops. Seemingly small interactions may have quite substantial effects throughout the entire system; what might appear to be substantial interactions may ultimately have quite insignificant system-wide effects. This non-linearity and non-proportionality of effect becomes especially relevant when considering interactions among social systems that are interpreted through the collective diverse histories, cultures, and experiences contributed by these multiple, pervasively proximate contexts. (Federman, 2008b)

As Frances Westley, Brenda Zimmerman, and Michael Quinn Patton observe,

most people prefer the image of a leader in control, with a clear, intended objective in

mind, striving against adversity to achieve the desired and intended outcome. But, the

UCaPP world,

…is itself transforming, that is changing the innovator as he or she seeks to change the world. A complexity lens allows us to look at these interactions more closely. Control is replaced by a toleration of ambiguity and the "can-do" mentality of "making things happen" is modified by an attitude that is simultaneously visionary and responsive to the unpredictable unfolding of events…

These two perspectives – intentionality and complexity – meet in tension. If you intend to do something, you make a deliberate commitment to act to bring about change. Complexity science is about unpredictable emergence without regard for (indeed, even in spite of) human intentions. These two perspectives meet in the question … to what extent and in what ways can we be deliberate and intentional about those things that seem to emerge without our control, without our intention? (Westley, Zimmerman, and Patton, 2007)

Clearly, a new – or at least, augmented – vocabulary is needed to capture what

has previously been thought of as "theories of action" (Argyris & Schön, 1974, 1978,

1996). Chris Argyris and Donald Schön provide what could be considered the iconic foundation of organizational learning—espoused and in-use theories. *Espoused theory* reflects actions that one would intend to take in a given situation if asked; *theory-in-use* reflects actions that one actually takes in that situation, relative to specific goals or objectives. Learning, according to Argyris and Schön, consists of incorporating changes to one's theories of action in response to deviations in outcomes as perceived and interpreted by the individual.

Simply correcting the deviation represents what Argyris and Schön call *single-loop learning*. However, such learning often acquires aspects of defensiveness that compromise the overall effectiveness of both the learning itself, and the organization. Potential defensive corrections might include compartmentalizing theory-in-use from espoused theory when there are inconsistencies between them, or willingly remaining ignorant of salient data that would expose the incongruities. Many defensive responses involve suppressing "bad news" through intimidation or other power and control mechanisms. Some individuals might simply change their espoused theory to correspond to their theories-in-use and actual behaviours, or introduce marginal changes to theories-in-use so that they are technically consistent with espoused theories. The overall idea is to protect and preserve extant theories-in-use so as to avoid embarrassment or other disruptive consequences (Argyris & Schön, 1974, 30-34; see also Argyris, 1994).

Double-loop learning not only corrects behaviour relative to nominal objectives; it also encourages reflection on the pertinence and validity of the means employed to achieve the objectives, thereby informing and possibly modifying theory-in-use.

Double-loop processes seek contextual information beyond direct behaviour-response data, and expand the domain of potential operational choices. These processes necessitate sometimes difficult reflection on an organization's self-observed behaviours, and the ability to cope with incongruities, paradoxes, and tensions between competing polarities, in an effort to "walk the talk," as it is popularly described (Argyris & Schön, 1996).

Both single- and double-loop learning presume the type of controlled and directed intentionality that is often effective when confronting either simple or relatively complicated situations on one's path towards a specific objective or outcome. The context of Argyris and Schön's theories of action approach is often a relatively focused and contained human system—a conventional, bounded organization, even considered in the context of a larger, structural "ecosystem" (Hinings, 2003). Whether considered in terms of Castells's (1996) network enterprise or as a contingent, emergent, Valence Theory entity, a complexity view of *organization* becomes limited within the confines of the more deterministic grounding of Argyris and Schön's otherwise useful model. Members' own conception of the boundaries of their respective organizations limit their ability to negotiate the tension of organizational intentionality and environmental complexity.

The apparent inconsistencies inherent in that tension are perhaps best navigated by considering a third learning loop based on considering the effects perceivable within an organization's purview as the organization's *strange attractor[17]*.

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[17] Complex systems are often described in mathematical terms using Henri Poincaré's topological approach. In mathematics, and particularly in topology, solutions to sets of

An organization can act on a holistically anticipated set of intended effects through a process often called *feedforward*. Its actions can be monitored and combined with comprehensive environmental sensing that especially includes contexts that might otherwise exceed the assumptive domains of the organization's conventional, purposeful concerns. The sensing, fed back into future anticipations based on the emergent properties of the complex environment, creates new feedforward loops. The combination of holistic feedforward, and environmentally sensed feedback tracking the trajectory of effects in the organization's environment, creates the third learning loop.

*Effecti*ve [sic] theory enables an organization to incorporate its own lived experiences, and both prior and ongoing learning, contextualized by its effects on other organizations and constituencies that are so touched. In valence terms, these effects are the measures of the valence relationships that connect one individual or

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nonlinear equations are often depicted as sets of curves drawn through an n-dimensional phase space, where n represents the number of variables in the equations. A point that "travels" along one of these curves defines the state of the system at any time; its movement over time is called its *trajectory*—a concept is most easily imagined as a point moving through physical space relative to reference axes of length, width, and breadth. At any time, the "state" of the physical system can be defined in terms of the point's position; its path through space is the trajectory. Similarly, in a complex system, there would be more dimensions, each dimension, or variable, referring to a parameter that uniquely defines an aspect of the system being described. The trajectory of the point is called an attractor, with three topologically distinct forms: *point* (a system that eventually reaches stable equilibrium, representing the end of change and growth; i.e., death), *periodic*, meaning a system that has regular oscillations between two states, and *strange* that applies to chaotic systems such as those characterized as exhibiting properties of complexity. Strange attractors tend to create distinct patterns of trajectories for a given system, although the precise location of a point in phase space at a particular time cannot be accurately determined. This means that the system is non-deterministic – its future state cannot be accurately predicted from its past state(s). Substantial changes in the type, shape or existence of an attractor, corresponding to substantive changes in the nature of the defining parameters (e.g., contextual ground of the system) is called a *bifurcation point*, and marks a state of instability from which a new order of greater complexity can emerge (Capra, 1996).

organization to others. Just as a traditionally conceived organization measures its effectiveness through resource acquisition and deployment, or achievement of prescribed outcomes and objectives, a valence organization measures its *effect*iveness by how well it anticipates, perceives, and adapts to the complex, emergent changes resulting from the effects it creates through the interactions among its valence relationships.

Sensory Revision

One of the key descriptors I use for characterizing traditionally conceived organizations is *primary-purposeful*. In such a characterization, an organization's mission – its goals, objectives, and sought outcomes – become the idealized, overriding concerns of its members. There is a discourse (e.g., Bass, 1990) – and a corresponding discursive critique (Gee, Hull, & Lankshear, 1996) of such an organization – which maintains that members should be systematically encouraged to take on the organization's mission as their own. The fragmentation of an organization's overall objectives, and the delegation of the component fragments, are characteristic aspects of the annual "objective-setting" exercise for this study's most-BAH organizations— Organizations M and A.

By "primary-purposeful," I mean that the organization's goals and objectives – and by extension, those of its subordinate members – are paramount, usually placed ahead of any other considerations. In other words, the purpose is primary. Thus, any secondary or tertiary effects that the primary-purposeful organization creates in its respective social and material environments tend to be more-or-less ignorable by its

management – externalized with respect to fiscal responsibility, if possible, but almost always considered subordinate to the organization's primary purpose, that is, its mission. If, somehow, those effects might impinge on the attainment of said purpose, they quickly come into focus and become higher priorities.

The goals, objectives, and quantifiable outcomes expressed as mission come from the organization's vision, a statement of where and how it sees itself, often expressed as a sort of reflexive outcome. As with mission, organization members are strongly encouraged to adopt the organization's vision and values as their own. However, the encouragement can be regarded with some cynicism: Gee, Hull, and Lankshear observe, "fast capitalism requires total commitment on the part of workers/partners[;] this commitment is not necessarily reciprocated in many of the ways that might seem necessary for engendering that commitment in the first place" (1996, p. 35).

Among the consequences of my contention – that an *organization's* expression of its purpose shifts from outcomes to effects in a UCaPP context – is the necessity for a corresponding transition of an organization's dominant sensory metaphor as the source of its collective impetus. Vision – especially when conveyed by a charismatic and inspiring leader – drives purpose and transforms a statement of mission into impetus. Notwithstanding the power of a transformative vision, it is important to realize that, as a sensory metaphor, vision is inconsistent with UCaPP conditions and thus, with the reality of the contemporary world.

Vision is the only human sense that operates at a distance—indeed, distance and separation are required for vision to operate. There is a corresponding detachment that necessarily imposes itself on the vision creator and holder, as de Kerckhove (2002) originally describes in the detachment of context from text that occurred with the introduction of phonetic literacy, and I trace through the rise of visual culture throughout history (Federman, 2007). Thus, in a world that experiences pervasive *proximity*, a sensory metaphor that contradicts proximity is hardly appropriate, let alone useful. Rather, as our most proximate sense, *tactility* – the sense of touch – may well provide the most useful and appropriate guidance for contemporary *organization*.

Tactility is an expression of effects. It is, therefore, consistent with both e*ffect*ive theory as an extension of Argyris and Schön's theories of action, and with Valence Theory as a foundational theory of *organization*. Adopting tactility as the sensorial guiding ethos encourages the characteristically UCaPP culture of inquiry by replacing the obligatory and prescriptive vision *statement* – an imperative to unswerving action towards accomplishing a purpose – with a tactility *question*: whom are you going to touch, and how are you going to touch them, today?

A tactility question is at once both personal and corporate, individual and collective. It draws first from an individual's values, using those to inform a negotiated *place* from which the collective values of the organization emerge. In a sense, the organization aligns its values with those of its members, not the other way around. It is not that a primary-purposeful – most often BAH – organization has a well-defined, guiding purpose and a UCaPP organization does not. In fact, the respective purposes of successful UCaPP organizations, such as Unit 7 and Inter Pares, tend to be very

clear and well-focused. They also tend to be emergent, and therefore, any given organization's purpose may take on a contingent nature. In other words, the UCaPP organization's purpose tends to evolve over time based on the complexities of the contextual circumstances, and their specific interactions with those constituencies that become enmeshed with them.

Described another way, a UCaPP organization's purpose continually emerges from the complex interactions among experienced and perceived effects that the organization enables throughout its environment, relative to those it intended. Those intentions are the answers to the organization's tactility question, the expressions of its members' collective values. *Effect*ive theory enables the Valence Theory-conceived organization to negotiate the polarity tension between intentionality and complexity.