AN HOLISTIC APPROACH TO ORGANISATIONAL LEARNING: DRAWING THE MANY SENSES TOGETHER

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ABSTRACT

This paper responds to the call for an holistic approach to learning by presenting a model that draws the many senses of learning together. At the heart of this model of holistic learning is the individual, an individual who is interdependent with their environment: where the individual shapes and is shaped by its environment. The innovation in this model is based on the fusion of the concept of holons, complexity theory and agency. The implications for organisational learning are considered, bringing us closer to the goal of effectively working and learning within complex organisational situations.

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1. INTRODUCTION

Organisations operate for specified purposes, which are usually clear, and for larger organisations, are often overtly stated in organisational documents, setting out mission statements, organisational goals and strategies for achieving these purposes. Ideally such purposes are achieved by workers; whether the goals are ultimately about profit-making or providing a public service, human capital theory (Becker, 1964) suggests they will be best achieved with 'effective workers'.

From an organisation's perspective, 'effective workers' are those that assist in achieving its goals in the fastest, least costly way. But given the current environment, it is increasingly harder to achieve organisational goals. This is partly because of significant changes that constantly arise with respect to the way businesses operate, particularly the market shift away from goods and their manufacture, towards more services and knowledge-oriented industries, and in changes in technology. These changes are also making it more difficult to be an 'effective worker'. But these two phenomena – workers' and organisational goals – appear to be interrelated, creating a spiral effect. As goals are harder to achieve, organisations demand more of their workers and as workers find it more difficult to perform effectively, or at least do not perform to the standard required, the organisation's goals drift further out of reach.

The traditional view, based on human capital theory, assumes that if workers are adequately educated, trained, and/or experienced they will increase performance, and that performance will directly and positively impact on organisational performance. However, this approach appears to be flawed (for example, Ashton & Sung, 2002). Something different is required in the current demanding environment to produce 'effective workers'.

Both the problem, and indeed possible solutions considered, are fraught with complexity, since these must be considered in the context of a workplace, and encompass learning and action, yet also consider the wider environment. Such complexity encompasses consideration of workers, their work or profession, their places of work, effectiveness and measurement of learning and work, and thus these include competence, expertise, knowledge and capacity. But these must also take account of the worker as a person: someone with an identity and a history and a life outside of work. These are all complex concepts, individually, and their meaning not necessarily settled nor universally agreed, so considering them collectively is daunting.

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Moreover, in reviewing conceptual complexity, there needs to be consideration of relationships between the improved performance of workers and the employing organisation. This might take into account individuals, their development, their performance at work and the organisation in which they work, that is, an holistic approach. This aspect of the inquiry is particularly important given the growing acknowledgement of the lack of a direct link between the performance of individual workers and organisational goals.

Some researchers have begun to explore ways of working within the complexity, rather than backing away from it or trying to mange it, this paper goes deeper. Here I bring together a range of current theories and build on them to develop a conceptual model around these ideas, and in doing so elucidate a better understanding of how people learn and act (Section 3). Additionally, as a consequence of drawing the many senses of this complex situation together in my conceptual model, I begin to identify ways we can change and shape our practice to make a real difference to workers' and organisations' learning (Section 4). First, however, I begin with justification for, and explanation of, an holistic approach to learning in this context to shape the conceptual model.

2. HOLISTIC APPROACH TO LEARNING

There is an abundance of literature and possible theories around organisational learning focussed themes across a broad range of disciplines, including: psychology, philosophy, cognitive science, organisation management, organisational behaviour, organisational psychology, human resource management, labour market studies, management, knowledge management, education, and adult learning. And more recently, some of the central ideas addressed in these different disciplines have been examined in the context of workers and workplaces creating a separate body of literature on 'workplace learning'.

Among this "bewildering array of theories" (Hager, 1999, p. 65), however, each alternative theory typically focuses on a specific aspect of the 'problem', advocating the overriding importance of that aspect relative to others. As a result, these theories offer different degrees of understanding over differing aspects of the issues at hand. In summary, the central problem is the current predominantly atomistic view of learning and segregationist approach to research on learning at and for work.

In this Section I explore and develop an alternative approach referred to as 'holistic learning' which is then fleshed out conceptually in Section 3. I begin with a brief explanation of a new categorisation of the literature on learning that I have developed (Section 2.1), followed by a broad outline of the concept of holistic learning which various researchers have described over time as whole person, organic and embodied in providing an argument for drawing these elements together (Section 2.2).

2.1. Key elements of learning

The consequences of the atomistic or 'piecemeal' approach to research are both problematic and valuable. Problematic because the whole of learning is never clearly and adequately understood and, therefore, not addressed in the research findings. Some of the difficulties encountered as a result of this blind approach to piecemeal research on learning are relatively superficial, for example: researchers label the same concepts or issues with different terms; some researchers fail to acknowledge similarities or nuances in their work with others; and researchers in different disciplines are spending precious and limited resources on the same issues. More significantly, however, is the lack of awareness,

understanding and application in research and across disciplines leading to conclusions drawn concerning issues larger than those studied and perpetuating the inability to view and understand the whole, complex picture of learning.

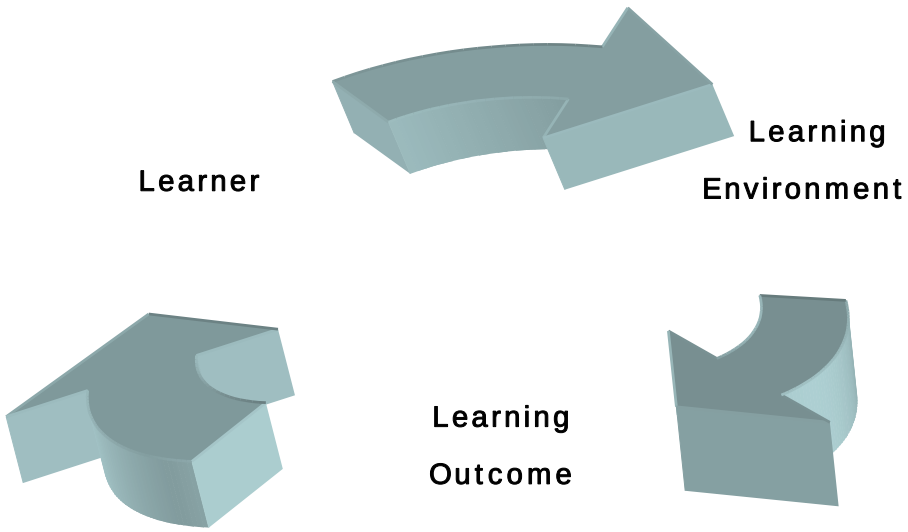
The focus on specific issues with respect to learning, however, has value. Our current understanding of learning is greatly indebted to this research and it is acknowledged that in many cases the only way researchers can explore specific aspects of learning is by effectively assuming all other elements constant. Making these assumptions is not an error, but when they remain implicit they are often forgotten or not considered further.

After considering a wide range of this literature on issues relating to organisational learning across a number of disciplines, a number of common themes within the research began to emerge. A detailed analysis showed that in my view, research on learning can be organised into three main groups of priorities, and these relate to the:

- learner;
- learning environment; and
- learning outcome (what is learnt).

In fact, the impact of each of the three key elements identified form a circular relationship as illustrated in a simple form in Figure 1. That is, they impact on, and interrelate with, other elements. But without considering all these aspects of learning and how they interrelate, a complete understanding of learning at and for work cannot be achieved, and consequently attempts at organisational learning and workers' development will be incomplete, inconsistent and less than satisfactory.

Figure 1 Relationship between key elements of learning in the literature



Based on this idea that research is generally undertaken with respect to, or focussing on the learner, the learning environment or the learning output a more systematic format of some research on learning is illustrated in Figure 2 to demonstrate an example of how the categorisation can apply. Representation of some prominent themes featuring in research on learning around the key elements of learning in a single table begins to illustrate a relational, holistic concept of learning by piecing together these important findings and facilitating their use in an holistic fashion in practice.

Although the categorisation of topics or aspects of learning as illustrated in the table might appear to be perpetuating the dualisms (or even simply creating a trichotomy) that contradict the concept of holistic learning, the table in fact provides a means for coherently collating what we know and understand about learning. Realistically all the variables cannot be considered and analysed in detail at once. Indeed, "[h]olism accepts that a whole is constructed out of many smaller parts, but it considers that those smaller parts create, via interaction, more than the sum of the separate parts" (Baets, 2006, p. 20). Holistic learning practically, then, involves firstly the recognition that all the variables are relevant and important. This allows one to accept and acknowledge research based on 'false dichotomies' or 'false dualisms' (Hodkinson, 2005; and Hager, 2005) but only such that they help advance an understanding of aspects of learning that are then considered as part of a whole, that is, in perspective . Consequently, such a categorisation is only the first step in understanding learning holistically. Building on this categorisation, the following section explores and collates the current ideas around holistic learning, to guide and shape the development of a model of holistic learning.

Figure 2 Key Elements of Learning

KEY ELEMENTS OF LEARNING									
LEARNER **WHY (Elements leading to learning as a function)**				**ENVIRONMENT/SITUATION** **WHERE (Context)**			**LEARNING OUTCOME** **WHAT (Product)**		
Awareness of own learning	Intention to learn (conscious participation)	Motivation/ Reason for learning	Ability/ Approaches to learning	Level of Instruction/ Type of learning environment	Situational specific learning	Broad environment or policy	Product/ Outcome	Quality/ Degree/Type of learning	Measurement
Conscious	**Intentional/ Planned**	**Out of Necessity**	**Knowing how to learn**	**Formal (includes education and institutional,**	**Workplace and work-based learning 'on the job'**	**Lifelong learning**	**Explicit knowledge and skills**	**Deep vs Surface learning**	**Assessment**
Unconscious	**Unintentional (includes incidental)**	**Desire to learn/ Improve**	**Learning Styles**	**Apprenticeship coaching, mentoring etc)**	**Workplace training (off-the-job)**	**Learning culture/ Community/ Society**	**Tacit knowledge and skills**	**Single and double loop learning**	**Competence (VET) and key competencies**
Self-directed/ autonomy		**Reluctance and resistance to learning**	**Field independence and dependence**	**Informal/ Non-formal**	**Profession based**		**'Bad' learning**	**Blooms taxonomy of learning outcomes**	**'Transfer' of learning**
Agency and identity theory				**Learning strategies**	**Educational institution**		**Unlearning Relearning**		**Experience**
THEORIES OF LEARNING HOW (Explanation of Process and Function) **Behaviourist, cognitive, humanist, social, constructivist based theories of learning and complex adaptive systems theory**									

2.2. 'Whole-person', organic, holistic, and embodied learning

Learning is a dynamic phenomenon, involving a range of variables, and therefore can only be truly understood by considering the whole and acknowledging associated complexities, as discussed in Section 2.1 above. Consequently, the idea of an holistic approach to learning is something that has re-emerged with respect to workplace learning. The essence of these ideas where the basis of Dewey's (1896) explanations of learning, which he described as organic and environmentally embedded.

Dewey's 'organic learning' refers to a non-dualistic approach to learning, meaning it engages the whole person. Beckett and Hager (2002, p. 165) more specifically describe this organic type learning as having an holistic, integrative emphasis on learning that,

> aims to avoid other dualisms common in educational writing such as mind/body, thought/action, pure/applied, education/training, intrinsic/instrumental, internal/external, learner/world, knowing that/knowing how, and process/product.

'Whole person' involves emotions, values, experience, daily practice *and* intellect. These dimensions have been considered in research on learning in isolation, although Beckett & Hager (2000, p. 304), like Hodkinson (2005), see the separation of these dimensions as artificial. Proponents of an embodied theory of learning support this view and are exploring ways of understanding and explaining the importance of the physical body in learning (for example, Varela, Thompson and Rosch, 1991; and O'Loughlin, 2006). The most striking distinction in this approach to understanding learning, and particularly learning at and for work, is the relational nature of learning. As Gold and Watson (1999) explain, learning cannot be separated from practice and the social relations that make it legitimate.

Notably, this 'whole person' concept espoused in an holistic (and embodied) approach, can also be strongly linked to Polanyi's (1966) philosophy, and those of Wittgenstein's later work (Gill, 1974) and Merleau-Ponty, in terms of their emphasis on action, body and tacit knowledge. Merleau-Ponty, for example, described the body as a way of knowing ourselves through the world, through the 'lived situation': he explained physical activity as a way of learning about yourself, your body and your mind (O'Loughlin, 1995, p. 2). And so embodied learning is a theory of knowledge production that 'depends on being in a world that is inseparable from our bodies, our language, and our social history' (Varela, Thompson and Rosch, 1991, p. 149).

Explaining the embodiment of our cognition from a scientific perspective, Varela (1999) describes cognition as enaction. That is, creating a world through activity. Maturana and Varela's (1980 and 1998) joint works: "attempts to understand human cognition as the biologically grounded languaging process enacted by autonomous humans whose observations shape and are shaped by the physical and linguistic systems within which they are embedded" (Horn and Wilburn, 2005). As a result, they explain learning as an organic and embodied process based on the: "inseparability between a particular way of being and the way the world appears to us" (Maturana and Varela, 1998, p. 26).

This explanation of learning as individualistically embodied, and therefore organic, and holistic, indicates that it is the subject, and his or her perceptions, according to who they are through their history, experiences, and situations or context, which 'constitutes' their learning based in their actions and experiences in those situations. But before we can fully understand and model this holistic learning to guide practice, a better conceptual framework and explanation of what is meant by the 'whole' is necessary.

3. FRAMING HOLISM: BUILDING A CAONCEPTUAL FRAMEWORK

The key elements of learning (Figure 2) collectively underpinned by an holistic view of learning have so far driven a conceptual argument for holistic learning. In this section, drawing from a range of disciplines, I develop that conceptual framework. Firstly, introducing the concept of holons (Section 3.1), followed by contributions from science in the guise of neuroscience and complexity theory (Section 3.2), and finally adding a philosophical perspective focussing on human action (Section 3.3).

3.1. Quadrants and context

Wilber (1996, p. 71-73) presents a useful picture of the 'whole' for this purpose of building a conceptual model of holistic learning, which he terms a 'holism'. The general principle of 'holism' is that all the properties of a given system (for example, biological, chemical, social, economic, mental, linguistic systems, etc.) cannot be determined or explained by the sum of its component parts alone. Instead, the system as a whole determines in an important way how the parts behave. This idea was concisely summarised by Aristotle (2002) in *Metaphysics*: "The whole is more than the sum of its parts".

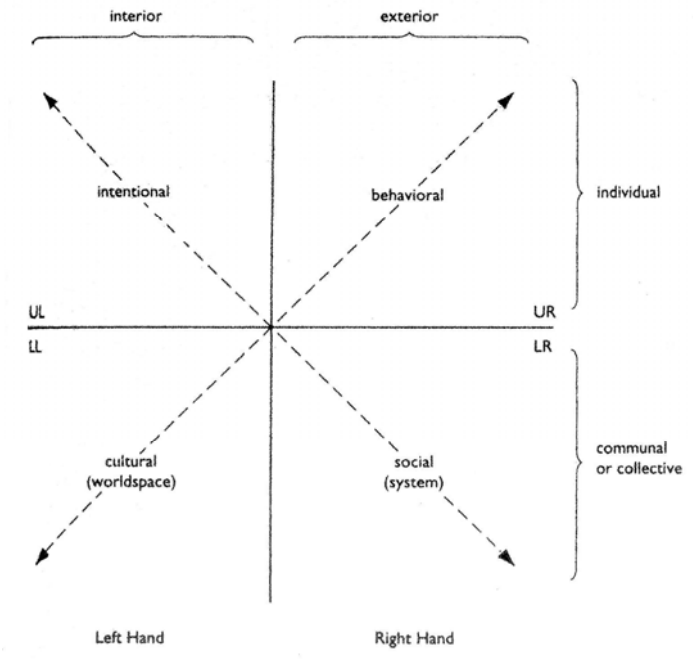
The holism described by Wilber (1996) was devised after rationalising the similarities and differences in a broad range of theories based on hierarchies which, as Wilber observes, are holons: a holon refers to a system (or phenomenon) that is a whole in itself as well as a part of a larger system. In fact, Wilber argues all theories are based on natural hierarchies (referred to as holarchies) and holons, and when he recognised this commonality, he was able to devise a holism based on "the four quadrants". On this analysis, Wilber presents the 'whole' in four manageable components or quadrants, representing the single and collective and the interior and exterior (Figure 3).

The upper half of the diagram represents the individual. The upper right quadrant is part of the standard, objective, empirical science map – it is the one we are most familiar with. The upper left hand is about interior depth and consciousness; this area represents subjective internal feelings. This quadrant is where emotions and experiences within fit, which cannot be accessed in an objective, empirical fashion.

The lower half of the diagram is about the collective. Wilber suggests that individual holons only exist in communities. And this communal aspect also has an interior and exterior, which Wilber labels cultural and social. The cultural refers to the values and identities shared in communities and social refers to the material, institutional forms of the community.

Wilber goes on to give examples or details of the four quadrants and later examples of theorists and which of the quadrants their theories fit within (Wilber, 1996, p. 86). He places Skinner and Watson and the theory of behaviourism in the upper right quadrant – they describe observable individual behaviour. Piaget (1929, 1966) is listed in the upper left hand quadrant, as he began to describe internal development of the individual. Figure 3, as a representation of the 'whole' clearly illustrates the problem with the piecemeal approach to learning generally taken in learning theories.

Figure 3 Wilber's four quadrants



(Source: Wilber, 1996, p. 71 fig 5-1)

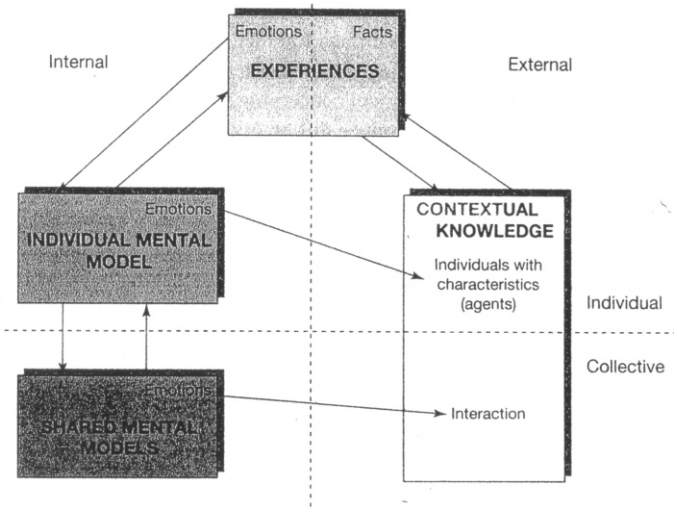
Figure 3 provides for the possibility of building a more comprehensive model of learning, and particularly an holistic approach to learning at and for work, if the elements of learning are more clearly represented as relational and interdependent. This is achieved, in part, by Baets (2006, p. 88) in the context of organisation management, when he combined Wilber's holism with his own model of knowledge and management learning to illustrate a conceptual model he calls "innovation as learning" (Baets, 2006, pp. 87- 88, reproduced at Figure 4). Baets' model illustrates how the key concepts of mental models, emotions, knowledge, experience and interaction interrelate in learning – that is, he illustrates a form of 'holistic learning'.

Baets points out that under this model, on the 'real' side (that is, the observed, as opposed to the emotional side) as represented in the upper right hand quadrant we acquire experience and learn actions. He goes on to explain, however, that these experiences cannot be transformed into mental models (upper left hand quadrant) unless emotion is acknowledged within the experience: "The emotions determine how employees feel in their job but also how and why they want to share, and more generally how they want to cooperate" (Baets, 2006, p. 88).

According to Baets (2006, p. 181):

> The learning human therefore needs to return first to their own inner feelings and sensations. In the West, this is close to a kind of mission impossible, since we strongly underestimate the potential of the embodied mind…, a mind/body driving energy. In the Western we often mix the power of thought with an extreme application of the analytical brain function.

Figure 4 Baets' Innovation as Learning



(Source: Baets, 2006, p. 87, fig 5.4)

This fuller explanation of the whole and how it impacts on learning (in an holistic way) concurs with Rogers' (1980) desired 'whole-person' learning approach. Simons and Ruijters (2004) also stress the (neglected) role of emotion in learning and professional development. They present a model relating emotions to what they refer to as stages of learning: elaboration, expansion and externalisation (Simons and Ruijters, 2004, p. 226, Figure 7).

The emotional and essentially human aspect of learning, however, only tells half the story. Drawing again from Figure 3, the social, collective influences are equally important. And although social theories of learning have been developed more recently, they have not been well integrated into learning theories focussed on the individual, at either the cognitive or humanistic level. Indeed it is the lack of consideration of the relational condition of all aspects of the 'whole', that is, across all four quadrants, that is problematic. Therefore, before Wilber's holism can be adopted in this context, a fuller understanding of the will or driving force, within the individual that manifests this relational approach to the 'whole', must also be explored and explained. This, it is asserted, can be explained on two levels. First, by using scientifically based theories of neuroplasticity and complexity, in its application to individuals (autopoiesis) (Section 3.2). Secondly, the holism of learning is supported by a theory of agency and a philosophy of mind (Section 3.3).

3.2. The contribution of science

Social cognitive neuroscience opens up a scientific pathway to support my proposition that an important and central part of being human and learning is about relational-ity and integration. Social cognitive neuroscience is a relatively new field, its founding attributed largely to psychologists, Cacioppo and Berntson (1992). The innovations in this field uncover that a part of our brain is actually sensitive to the world at large. This 'social brain', is unique in its sensitivities as other biological systems mainly regulate their activity

in response to signals emerging from within the body, not beyond the skin: it is the sum of our neural mechanisms that orchestrate our interactions as well as our thoughts and feelings about people and our relationships. As a result, there is scientific evidence that our social interactions actually play a role in reshaping who we are, through 'neuroplasticity': this means that repeated experiences mould certain neural circuitry.

Complexity theory, another scientifically based theory, makes another important contribution to the development of an holistic approach to learning: it dispels concerns about the inability to manage and deal with the complexity associated with an holistic approach to learning. Complexity theory does this by showing that the complex situations one imagines as 'unmanageable' are indeed so, or at least uncontrollable. The complexity does not need to be and cannot be controlled, but more importantly it finds order naturally: through a self-organising mechanism, where in acting in self-purpose, order is achieved.

Complexity theory is the study of complex systems; and chaos is a particular mode of complex behaviour, as is order. A complex system can at one time behave chaotically but on other occasions appear perfectly deterministic, a simpler behaviour. As a result, complex systems are described as unpredictable (Baets, 1998). And although founded in science, this concept has been proven true with respect to organisations (refer for example, Holland, 1995; Baets, 1998, 2006; Stacey, 1996, 2007; Antonacopoulou, 2006; and Wheatley, 2006) and individuals (Maturana and Varela, 1980; Wheatley, 2006).

A system can be referred to as complex in the sense that a great many independent agents are interacting with each other in many ways (Waldrop, 1992). The individual components of a complex system adapt themselves in a process that is not centrally controlled and that ultimately leads to a whole of which the sum cannot be traced back to the behaviour of the individual parts. The behaviour of the system as a whole is generated by its elements and their interaction. That is, the system is *autopoietic* (Maturana and Varela, 1980): circular, self-productive or self-creating, self-conservative, self-organising and self-referencing. Observers are entirely outside the system, and therefore, perceive the system as well as the environment.

Applying this theory to organisations (as living systems) creates a new perspective: under this scenario, organisations are a group of components (people) which are interacting with each other and pursuing their own individual goals. That is, these systems create order by themselves, by apparently modifying know-what and know-how as a consequence of interaction with the environment and its effects on actions and beliefs of the living system and others (Holland, 1995). The theory of autopoiesis has also been applied to individuals and is referred to as "enacted cognition". Enacted cognition means knowledge will only be knowledge if it is combined with action and creation - otherwise it is information. That is, the world is created through activity.

Stacey (1996, p. 264) explains the implications of complexity theory:

> What the science of complexity adds is a different theory of causality, one in which creative systems are subject to radical unpredictability, to the loss of the connection between action and long-term outcome. The purpose of the theory and the research is then to indicate how conditions might be established within which spontaneous self-organisation might occur to produce emergent outcomes.

Western thinking about science and organisation in general, however, does not fit easily with the theory of complexity. It is also generally opposed to Western philosophical and scientific traditions. Nonetheless, it is evident that the theory of complexity contributes to a

better understanding of social phenomena, particularly in organisations. Although many will have difficulty accepting the consequences of this theory, they may acknowledge that very few current concepts in the literature contribute to finding solutions in this dynamic environment as effectively as complexity theory.

Consequently, this scientific justification for what in reality we see, in terms of the prominence of relationality in understanding and explaining learning (and particularly learning at and for work) provides significant weight to an argument for framing learning holistically. Indeed, the idea of self-organisation provides a useful explanation of the capricious nature of predictions of outcomes in organisations and in designing learning for workers. This idea also justifies the emphasis placed on the central role of the individual and the desire to understand what drives the individual and, in doing so, hopefully uncovers the conditions for self-organisation and consequently workers' learning development. As a result, I now turn to a theory based on philosophy of mind, which provides the basis for 'self-organisation' in individuals as a crucial element in this evolving conceptual innovation around holistic learning.

3.3. Agency and learning

Self-organisation as described by Maturana and Varela (1980) asserts that people cannot be influenced by external (imposed) goals but act in a way that is self-creating. This can be compared and likened to many early philosophers' ideas about self-realisation and their explanation of acting – with reason.

First and foremost attention is drawn to Spinoza's *Ethics* (c.1675). Beckett (2006; Beckett & McManus, 2006) develops Spinoza's idea of 'will-ful rationality' using recent work by Derry (2004) and Guile (2006). Derry (2004) explores the influence of Spinoza on Vygotsky, noting Vygotsky's work addresses questions about the nature of what it is to be human as well as the development of the intellect. In doing so Derry considers the relationship between free-will and the development of consciousness. In particular, Derry (2004, p.119) explains the conception of the will that Spinoza (c.1675) put forward as a means for considering self-determination as a 'specifically human process of coming to be in the world'. Derry then links these claims to Vygotsky's (1997) work particularly drawing attention to Vygotsky's claim of embodiment: the work he was undertaking with colleagues examined the nature of mind as 'embodied in activity that sustains and constitutes it' (Derry, 2004, p. 114). The alliances with the theory of: embodied learning (Maturana and Varela, 1998; Horn and Wilburn, 2005; and O'Loughlin, 2006); Rogers' (1980) whole-person learning; and Dewey's (1896) and Beckett and Hager's (2002) organic, holistic approach to learning are noted here.

Beckett and McManus (2006) also note the work of Guile (2006) in arguing against the Kantian distinction between theory and practice providing support for the concept of embodiment through the 'social practices of reason' and in doing so provides a link to the theorisation of educative practice. Guile (2006) points out that from Vygotsky's perspective, when we learn theoretical concepts we are not acquiring representations, rather we are being 'repositioned' to act differently in the world. Vygotsky argued that we have to understand the system of connections that exists between concepts and their representations before we are in a position to infer what follows from knowing a specific concept. This epistemological position allows Vygotsky to identify the interdependent relation between theoretical and everyday concepts.

Beckett and McManus (2006) then argue for a five-feature theory of agency, underpinned by a Spinozan 'will-ful rationality' with the support of Derry and Guile. Beckett's richer theory of agency is linked to learning through 'freedom' in Spinoza's terms or 'free-will' as Vygotsky (1997) referred to it. Derry (2004, p. 115) explains that:

> will is inextricably linked to intellect...[t]o be educated is also a process of which becoming free is intrinsically a part of, for to be educated is not to 'know' a range of propositions or perspectives but to understand the reason for holding particular beliefs and rejecting others.

Derry (2004, p. 117) explains that: "[t]o be guided by adequate rather than inadequate knowledge is to be free from external determinations". Beckett and McManus (2006, p. 7) points out that this 'adequate knowledge' is not propositional but experiential and that the decisional nature of these experiences is akin to Aristotle's idea of *phronesis* and 'redolent of the Rylean tradition of respect for 'know-how'. Additionally, Beckett and McManus (2006, p. 7) claims that: "self-determination is about *coming to be* in the world. In its intentional decisionality, it generates and re-generates workers' selfhoods or identities".

The question is, how can this will-ful rationality be actioned or what might precipitate it? Returning briefly to the act of learning and its connection with action as explained by Maturana and Varela it is noted that the essential acts of learning are described as occurring in the making of distinctions. Varela (1999, p. 273) explains:

> Whatever specific item we focus our attention on (or talk about) is experienced within a perceptual (or conceptual) field, which explicitly or implicitly constitutes its environment. The dichotomy of figure and ground…springs from one and the same set of operations (i.e. focusing attention on and differentiating as a repeatable unit a specific part of our experiential field): the two sides are conceptually connate - we cannot have the one without the other.

People then, as they learn, become 'cognizing observers' (Horn and Wilburn, 2005, p. 747). Horn and Wilburn consequently make the connection between agency and self and how one can better know oneself and better learn:

> …observers establish relations among distinctions by acts of describing through language, a process that brings attention to the observer by the observer, thus making observers self-aware. Though much of what we learn does not involve an awareness of self, such awareness signifies capacity for reflection, which then enables learners to understand how they come to learn. This reflection or 'turning back on ourselves' (Maturana & Varela, 1998, p. 24), offers a chance to learn how we learn, to know how we know, and 'to discover our blindness and to recognise that the certainties and knowledge of others are, respectively, as overwhelming and tenuous as our own' (p. 747).

Developing a new, richer theory of agency suggest that addressing issues around workers' learning (and ultimately performance) is fundamentally about improving their agency in the face of this 'overwhelming' yet 'tenuous' knowledge, by bringing to prominence the integration of rationality and our desiring, with action, in quite constrained contexts. People are both subject to, and subjects of, their circumstances. And acting rationally in the 'heat of the moment', that is, informed by purpose and strategy based on acknowledged conceptual frameworks, is what is required. This is how our 'wilfulness' is enacted, as Spinoza has claimed. Indeed, as Baets (2006) shows, self-realisation can only be achieved in self-organisation, both at the individual and organisational levels.

Thus, the self-organising nature of individuals (at work) operates regardless of what the boss requires: "[a]ny living thing will change only if it sees change as the *means for preserving itself*" (Wheatley, 2006, p. 147, italics in original). If we want to influence

change, we need to work with it; we need to understand that all change results from change in meaning. "We need to be able to see what we are doing as we are doing it; this is where the true learning is. To develop this 'observer-self' requires practice, curiosity, and patience" (Wheately, 2006, p. 149).

4. DRAWING THE MANY SENSES TOGETHER IN PRACTICE

The conditions for this action, the will-ful rational action, can be created and enhanced through what I refer to as the development of capacity in workers (McManus, 2007). This capacity is not an instant, static, limited bundle of knowledge. The capacity-development referred to here is continuous, an organic process that occurs over time by the very doing of work. The capacity-development will occur as a result of improving the ability of the worker to continually learn and respond and adapt to change as necessary through experience and consciousness. This process is based on the broadly Spinozan account of agency presented above supplemented by the relational analyses of others, which supports and explains the holistic approach to learning proposed.

Critical to this, however, is an understanding of the fundamental place of embodied learning and 'agency' – a will-ful, rational agency, as described above, which constructs people in their self-organising and self-preserving existence. These are all 'relational' in nature. On this basis, a different, fuller understanding of learning can be modelled. Drawing on Horn and Wilburn (2005, p. 748), we see that the process of living and thus learning involves a 'reflective capacity':

> This reflective capacity, then, is at both the beginning and the ending point of this natural philosophy for learning that acknowledges the greater part of learning, of knowing, as engaging the reflective process of coming to know how we know, thus coming to know how we learn…This reflective turn, too, points learners to the realization that all learning is enacted as emergent phenomena that are self-directed, self-produced, autonomous.

Thus, a more holistic approach to workers' learning and capacity-development starts with the learner who is able and willing to identify their learning goals and wants to create and maintain a freedom to continuously adapt those goals and in doing so continuously learn. Emotion then becomes central to capacity-development. To a large extent, the individual chooses their own path; if a person knows how they best learn, they will be in a better position to understand and reconcile the context they are in, the rationale for what they are being asked to do at work, and what is required of them to effectively deal with their situation (that is, in choosing to apply a conceptual framework to their situation, including non-routine situations). This aspect of learning is represented in the upper left hand quadrant of Wilber's four quadrants (Figure 3).

Following this embodied view of learning, workers' learning and capacity-development cannot be understood or occur independent of the culture or environment from which one emerges. Culture and environment give structure and stability to our existence, but at the same time can limit learning. This aspect of learning (culture) is represented in the lower left hand quadrant of Wilber's four quadrants (Figure 3).

Indeed, due to the influence of the environment and the collective experiences in it, the individual's aims and goals are realisable. These goals must be considered within the network or situation in which the individual operates, and for a worker this is typically the organisation. And through interaction with this social system (network) the external

learning is 'shared'. There is a common context (represented in the lower right hand quadrant).

What is learned remains personal, just as the experience of the learning is personal, but part of the learning goals and part of what is learned can be shared. In this way, capacities are *not* solely ascribed to individuals, even if the motivation to develop capacities *resides* in individuals. Capacity-development is also equally a property of organisations, in which individuals work in groups. Thus, my conception of holistic and embodied learning is also integrated.

This holistic, embodied and integrated approach to learning described is illustrated at Figure 5 which I have developed using the 'four quadrants' concept (Wilber, 1996, refer Figure 3). In Figure 5, I show that collectively the literature on learning, as represented by the three key elements of learning in Figure 2, covers a holism (of learning). The learner-focussed issues straddle both upper quadrants (individual); the environment relates issues straddle the lower two quadrants (collective internal and external); and the product-focussed issues concern the upper right hand quadrant regarding the individual's exterior or external characteristics.

Figure 5 Learning framed 'holistically'

	INTERIOR **(what the learner thinks/knows and feels)** **Emotion**	**EXTERIOR** **(what the learner does and what you see)** **Fact**
INDIVIDUAL	**EMOTIONAL/** **MENTAL MODELS** Learner awareness Learner intention Learner motivation Learner identity Learning ability (eg self-directed)	**CHARACTERISTICS/** **BEHAVIOURS/AGENCY** Learner style Learner attributes (eg qualifications) Learning outcome/product (eg demonstration of competencies etc.)
COLLECTIVE	**CULTURAL/** **SHARED MENTAL MODELS** Environmental elements (internal): Contexts Collective/social/community identity Organisation/workplace culture	**INTERACTION/** **SOCIAL (SYSTEM)** Environmental elements (external): Formal versus informal/non-formal Level of instruction/facilitation Learning strategies

But this holistic framing can be taken further, for practical application[3]. This form of representation of holistic learning in the workplace shows how the worker learns and, more so, how this learning impacts on the worker and is influenced by who they are, that is, their identity[4]. In practice, this indicates that workers' learning and capacity-development can be supported through focus on enabling them to improve their self-awareness: an understanding of who they are, how they learn, what motivates them, and why they do what they do (in the context of work, although this would necessarily encompass personal issues). Furthermore, workers' capacity-development draws their awareness not only to themselves, but to their working environment (on various levels) and encourages them to begin to rationalise how the two function together – and if they do not function well together, how the differences can be minimised or eradicated. And above all, for capacity-development (and designing learning using an holistic approach), there is a need to focus on linkages, giving prominence to relationality.

5. CONCLUSION

The approach taken and represented in this paper is about better understanding and maximising the relationships between the key elements of work and learning - drawing the many senses of learning together - for the purpose of organisational learning. And through the development of this model of holistic learning a clearer understanding of what drives an individual worker, and their central, interdependent role in an organisation has emerged. By modelling holistic learning in quadrants or 'components' the system of holism provides a means for explaining how all the relevant factors are relational and interrelated. They are based on something unseen but substantial: our mental models and emotions built up from experiences and cultivated on our perceptions and desires. Perhaps more significantly, however, is the proposition that these perceptions and interpretations of experiences are bound by a person's core being and their will to maintain or realise that.

It is suggested that, based on this understanding of an individual (and thus learning) that is self-organising, the conditioning necessary for organisational learning can be referred to as workers' capacity-development. In summary, developing workers' capacity requires a drawing of the many factors or senses together. In practical terms this can be brought about by encouraging, as far as possible, awareness and means for, and benefits of, alignment of individual workers' goals and their employer organisations. The critical learning that must take place then, must be about oneself, and how one can develop or grow to adapt and meet the challenges of organisational goals, resulting in emergent and sustainable outcomes for workers: 'acting, living, and preserving our being' (Beckett & McManus, 2006).

The limitations imposed on this paper do not allow for elaboration on the facilitation tools that could be used to nurture capacity-development for organisational learning. Although empirical work undertaken to date suggest that capacity-development holds real promise of a way forward; a way of preparing workers for their work and professional development such that they can grow and adapt (or learn) as necessary in their organisation, and feel confident and well-armed to do so.

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[3] The author has successfully achieved this is in a program designed for the tax profession (McManus, 2006). The details however, are beyond the scope of this paper.

[4] a fuller discussion of the literature on identity supporting this view is unfortunately not possible given the limitations of this paper

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