The self-regulated nature of self-concept and the Life World – investigating the process of personal change and transition

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Contextualisation

Self-concept can be viewed as a dynamic and active aspect of the Self; not only does it reflect ongoing behaviour, but mediates behaviour too (Markus and Wurf, 1987, p 299). This paper proposes that this multi-faceted, agentive, view of self lends itself to the analysis of personal change and transition using a form of process-product modelling. This review examines the literature leading to this assertion.

Abstract: *This paper examines the systemic (dynamic) nature of self-concept to determine how the experience, and associated understandings, of change(s) in self-concept might be researched amongst Beginning Teachers (BT's) who are undertaking a long course of education and training. Self-concept has been extensively researched over many years and across a large number of fields; formulating a coherent overview of the topic has been difficult, however, because of the varied traditions and perspectives operating within different research communities. By adopting an approach similar to that used by Sternberg; this paper attempts to identify and map the many metaphors relating to self-concept according to their systemic properties, ie, structure, pattern and process, also their internal, external and boundary relationships within the individual person. The paper then examines self-regulation as a key feature of the autopoietic self, a systems based view of the human as a self-bounded, self-regulating and self-perpetuating entity, and develops a systemic perspective of self-concept as the basis for an integrated conceptual framework. This, essentially descriptive, view of self-concept is then further developed by introducing two process based ideas from Life Span Developmental Psychology – the notion of the life course as a evolving structure and the concept of the developmental life task. The paper ends by examining the role of possible selves as the dynamic force that 'powers' the process of everyday living and suggests ways in which the original research question might be further investigated.*

Introduction

The overall purpose of this review is to examine the systemic (dynamic) nature of self-concept to determine how the experience, and associated understandings, of change(s) in self-concept might be researched amongst Beginning Teacher's (BT) undertaking a long course of education and training.

First, it examines the concept of 'the Self' in its many forms, by drawing on the psychological literature. It identifies the major metaphors and descriptors used to express ideas concerning what self-concept is and how it comes to be as it is.

It then adopts Sternberg's approach to systematically map ideas about intelligence, and applies it to metaphors of self-concept. The resulting set of categories is then further developed, by adopting a systems perspective, leading to a summary conceptual framework that encompasses the various metaphors.

Finally, this essentially descriptive approach is developed further again by looking at more dynamic mechanisms able to 'power' the proposed system. This is in order that it might be applied to the self-concept development of Beginning Teachers (BT) as they pursue their long courses of training and education.

Self-concept

The concept of the self is undergoing a revival in psychological theory (Lewis, 2003, p 225), and there are many definitions of self-concept extant. Understandings of what self-concept is have changed over time. Current approaches, for example, include "a person's self-perceptions, formed through experiences with and interpretations of one's environment" (Shavelson, Hubner and Stanton, 1976, in Marsh, 1993, p 842) and, as Byrne suggests; "our attitudes, feelings and knowledge about our abilities, skills, appearance and social acceptability" (1984, p 429).

More generally, Bruner provides a clear sense of where the main arguments about self-concept are now moving when he suggests that in the past two or three decades, general perspectives on theories of Self have changed in two fundamental respects. Originally seen as largely monolithic and 'individualised', the construct now supports 'pluralist' and 'situated' models and interpretations; secondly, the field of study now includes 'interactive' explanations of development rather than straight 'nature versus nurture' dichotomies (Bruner, 1995).

Research in the last twenty years or so, has confirmed the self as something that is "dynamic - as active, forceful, and capable of change" (Markus and Wurf, 1987, p 299). It also suggests that the self is closely connected with moral practices involving agency and responsibility (Harre, 1987, p 41). The literature, overall, suggests that self-concept possesses "cognitive, perceptual, affective and evaluative facets" (Hoge and Renzulli, 1993, p 449).

However, in order to make self evaluation a practical possibility, individuals, *eg,* beginning teachers in training, need to posses "a theory about themselves". This allows a person to reflect on their own experience so as to become capable of self intervention and control (Harre, 1989). Contemporary theorizing posits a relational, developmental, approach to self. This, suggests that it exists as a "particular kind of reflective, interpretive understanding – an understanding that is always embodied and unfolding within an historical, sociocultural tradition of living (a life-world)." (Martin and Sugarman, 2001, p 104).

In adopting this position, the self is not only seen to be *in* the life-world, the self is considered to be a *part* of the life-world and therefore the two are merely different facets of the same phenomenon. The term 'life-world' is defined here as all the material and non-material aspects of a person's existence, including all their perceptions, memories and imaginings; it is a virtual 'network' connecting all of their physical and social relationships with people, places and ideas in the past, present and future. Defined in this way, the self and the life world are essentially mirror images of one another.

Self-Concept: multiple metaphors

The literature concerning self-concept is extensive with self-concept being "one of the oldest areas of research in the social sciences" (Marsh and Hattie, 1996, p 38). Therefore, because of its long history and the growing volume of publications on the subject, relating ideas from different traditions and perspectives in a unified or coherent way is difficult.

Self-concept, as a topic or theme, contributes to the literature on psychology at many different levels and in a variety of application areas. Within the literature on counselling, for

example, Hoskins and Leseho acknowledge the influence of psychological, sociological and anthropological influences on the many references to theories of the self (Hoskins and Leseho, 1996, p 243).

Within the biological sciences too, there is interest in how the self is "flavoured and coloured by previous experience" and how this process can happen in the "real brain" (Greenfield, 2000, p 27); therefore, the topic displays extensive vertical and horizontal distribution across a number of fields (see Figure 1).
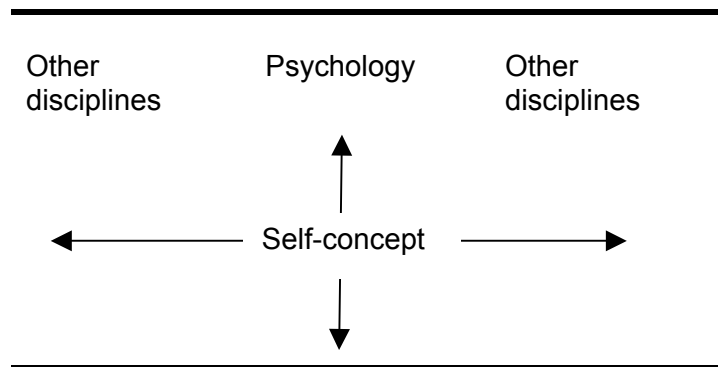

Figure 1. Horizontal & Vertical Knowledge concerning self-concept

For Bernstein, in the context of understanding how the nature of knowledge itself can be framed and categorised, *horizontal knowledge* related to the specific contexts or situations in which it was acquired and was therefore usually bound up with practice and knowledge in use; in terms of self-concept, this will relate to experiential understandings and reflective accounts about the self. *Vertical knowledge*, in contrast, is defined so as to be 'context free'; it is not so tied to particular situations or contexts and tends to be located within theoretical frameworks developed by specialist research communities (Bernstein, 2000). The problem of bringing the two types of knowledge together was referred to as *'re-contextualisation'* by Bernstein. Within this review, the aim is to bring together different theoretical and experiential understandings about self-concept within a single conceptual framework.

This categorical approach to self-concept is apparent in the work of Hoskins and Leseho (1996) who reviewed the use of metaphor to describe the nature and character of the self in specific counselling contexts and how the use of such metaphors affected practice. They found what they described as dramatic shifts between more traditional use of metaphor and those used in more recent postmodern contexts:

> "Although some theorists make reference to the cohesive self (Kohut, 1977), authentic self (Moustakas, 1966), or core self (Mahoney, 1991), others refer to subpersonalities (Stone and Winkelman, 1989), the saturated self (Gergen, 1991), or possible selves (Markus and Nurius, 1986)." (Hoskins and Leseho, 1996, p 243).

Despite the wide range of sources to choose from, Hoskins and Leseho are careful to stress that they have "chosen to focus on some of the more prevalent models that have a direct impact on counselling practice."

Among the traditional metaphors of the Self referred to by Hoskins and Leseho are those that see the 'Unitary' self as an 'Artichoke': at the centre lies the hard core, surrounded by layers of experience built up over the years (Kohut, 1977; also Leseho and Howard-Rose, 1994, quoted in Hoskins and Leseho, 1996, p 243). Alternatively the 'Integrated Self' approach

views the self as a 'Board of Directors' with each aspect of self represented by a different director. The Self is the Chair pulling all the disparate pieces together (Hoskins and Leseho, 1996, p 244).

Other more traditional accounts of the self include metaphors based on a transactional self, a constructed self, a self located in a cultural context, and a self generated from within the persons own mind. Bruner contrasts these more *process*-based approaches to Self with much earlier 'essentialist' ideas. In these approaches the self was conceived of as a substance or essence that could be inspected through introspection. In the twentieth century, therefore, the Essential Self has given way to the Conceptual Self (Bruner, 1995, p 101).

Postmodern accounts use a range of metaphors for the Self. The 'Narrative Self' approach sees the self as a process, specifically a narrative process (Howard, 1991; McAdams, 1993). In the 'Possible selves' approach Markus and Nurius (1986) make a distinction between the self in the present moment, and the self in the future and the past. Hoskins and Leseho refer to possible selves as a 'cognitive bridge' between the plans of the 'now' self and the 'future' self (Hoskins and Leseho, 1996, p 247). The 'Empty self' approach sees the self as 'holograph' with amorphous boundaries and therefore unable to 'contain' anything of substance; within this metaphor, the client is seen as engaged in a constant search for meaning to fill the void (Carlsen, 1988; Cushman, 1990).

In addition, the 'Internalised self' perspective developed by many theorists, stresses the internalisation of various selves within the self-schema (Tomm, 1987). There are two main variants to this approach. The first, the 'Community of selves' approach, is one in which the (multiple) self is seen as a small community who come together to collaborate as a team to complete one unified life project (Mair, 1977). This community, as envisaged by Mair is very much a collaborative, cooperative undertaking and is not at all hierarchical, controlling or authoritative, in nature (pp 125-149). The second, the 'Dialogical self' approach, has the multiple self conceptualised as dialogue, an approach that rules out ultimate unification of the self (Hermans and Kempen, 1993).

The classification system developed by Hoskins and Leseho, described above, has importance for this review, but is still limited in scope, in that the use of self-concept is treated within a restricted area of application and contextualised accordingly. More useful to this study is their observation that "Each metaphor has assumptions about the best way to live within the metaphor; the unified and integrated selves refer to a higher being or self; the multiple selves to a connected, sociocultural being." (Hoskins and Leseho, 1996, p 251). This insight suggests that the system might be significantly extended in that, for example, a metaphor category for *Philosophy* of self-concept will be necessary, along with some consideration of other metaphors including *Cultural* perspectives and *Identity*.

Combining views from different disciplines and application areas in the way suggested above is difficult; Wertsch and colleagues remark on the general inability of specialist researchers in different fields to speak to one another. They argue that, with few exceptions, it is almost impossible to produce integrative pictures of complex phenomenon across the different languages of disciplines (Wertsch, Del Rio and Alvaraz, 1995, p 2), and this tendency towards specialism and fragmentation is no less true for the literature on self-concept.

However, it is possible to survey an extensive field of study, such as self-concept and change, and to create patterns for analysing what is being said, by following an approach taken by Sternberg who, in a major review of the literature on Intelligence, used metaphor labels to describe various theoretical approaches to the topic. Sternberg states the case for this approach clearly:

"I believe it is difficult to understand the history of theoretical work on intelligence and how the different approaches to intelligence interrelate unless one understands past and present theories in terms of their underlying metaphors." (Sternberg, 1997, p 5)

If this is true for intelligence, then it should be no less true for self-concept; accordingly, the next two sections will consider Sternberg's approach to metaphor and then consider how it is possible to address the use of metaphor, in relation to self-concept, across a variety of sources.

Sternberg's approach

To begin with, it is important to note that Sternberg systematically mapped metaphors about intelligence onto a triarchic framework representing the *interior, exterior and boundary* regions of an individuals world (Sternberg, 1997, pp 4-5). Sternberg was interested to know how theories of intelligence could vary within, as well as across, different metaphors, in particular he asked: "What is intelligence as viewed from the standpoint of a particular metaphor?" In order to construct a synopsis of the major metaphors for intelligence, Sternberg asked a number of questions and systematically charted his findings *eg,* for any particular metaphor; "What is the major supposition or question; What is the major derivative question; What are the typical theories and theorists?"

Table 1 below, shows that Sternberg developed six metaphor groups plus an overall 'system' category that he described as: "an attempt to bring together various other metaphors by viewing intelligence in terms of a complex interaction of various cognitive and other systems." (Sternberg, 1997, p 261). In developing this methodology, one of Sternberg's explicit aims was to clarify what questions could and could not be addressed by particular theories because of the limitations of the metaphors upon which they are predicated.

Sternberg's Metaphors	
Geographic	A theory of intelligence provides a map of the mind
Computational	Mind as a computing device
Biological	Intelligence as a functioning of the brain
Epistemological	Intelligence based on Piaget's method of theorizing
Anthropological	Intelligence as a cultural invention
Sociological	How socialization affects the development of intelligence
Systems	Intelligence in terms of the interaction of multiple Systems

Table 1. Sternberg's six metaphor groups for Intelligence – plus an overall 'systems' category

Self-Concept: mapping metaphors and meanings using Sternberg's methodology

This section addresses the use of metaphor, in relation to self-concept, across the wider social sciences literature. The aim is to attempt a grouping or classification of the metaphors in order to express ideas about a possible meta-theoretic contextualisation of self-concept. This would be one that can, eventually, involve the idea of a systemic form of construction and operation.

The notion of self-concept as something that derives from, or is influenced by, internal, external and interface factors (as suggested above in the context of intelligence) has considerable face validity in terms of self-concept too. Accordingly, this idea will be used, initially, as a basis for organising self-concept metaphors.

The social sciences literature contains many allusions and metaphors relating to self-concept. These metaphors have been developed by particular schools and writers. With Sternberg's approach, referred to earlier, in mind it is possible to reduce the vast quantity of references to self-concept down to manageable proportions. The process begins by asking how different writers (and their metaphors) address the following three questions:

1. What is the relationship of self-concept to the *internal world* of the individual?
2. What is the relationship of self-concept to the *external world* of the individual?
3. What is the relationship of self-concept to the *boundary* between the two?

By systematically following the method above, it is possible to group together major writers and theories concerning self and self-concept and to give each grouping a 'label' or a name suggestive of a theme, source or field of enquiry within which they are located *eg,* metaphor labels such as geographic, taxonomic, dialogical. Whilst it is acknowledged that some of the labelling may be problematic or disputed, overall, a pattern is discernable, and is suitable as a starting point for further discussion and research. A brief description of each metaphor grouping is given below. Following this, a comparison is made between the findings for self-concept in this study with the original metaphor groupings for intelligence used by Sternberg, see Table 6 below.

Metaphors relating to the Internal world of the individual

Three broad categories or groups of writers concern themselves with the internal aspects of self-concept. The first, the *geographic* metaphor, covers all those approaches to self-concept that deal with the skills and abilities that a person could be said to possess or has developed. Second, the *biological* metaphor, concerns itself with those aspects of being conscious and self-aware about self-concept that have their origins within the 'living body' of the person. The third metaphor, *biographical and narrative*, covers all the stories and personal history that the person carries with him/her.

These metaphors also suggest three different *systemic* aspects of the self; abilities and skills as the *structural* qualities of the individual; feelings and conscious awareness as the *holistic or design* qualities of the person and the individual life story resulting from a creative *process* involving biography, narrative and reflection. Representative fields and contributors to these metaphors are summarised in Table 2 below.

Metaphor (Internal)	Derivative Question	Typical Theories	Typical Theorists
Geographic	What form does a map of self-concept take?	Structural Models Intelligence	(Marsh and Hattie, 1996) (Shavelson, Hubner and Stanton, 1976) (Sternberg, 1997)
Biological	How do the anatomy and physiology of the brain and the central nervous system relate to self-concept?	Mind Mapping (Function & Structure) Feelings & Awareness	(Carter, 1998) (Sacks, 1986) (Greenfield, 2002)
Biographical /Narrative	How is the personal 'story' of self-concept expressed and understood by Individuals?	Biographic Self Possible Selves Life Span Developmental Transition Reflective Practice Narrative	(Maclure, 1993) (Markus and Nurius, 1986) (Sugarman, 1996) (Lankard, 1993) (Schon, 1983) (Bruner, 1995)

Table 2. Metaphors relating to the Internal world of the individual

Metaphors relating to the External world of the individual

Three broad categories or groups of writers concern themselves with the external aspects of self-concept. The *taxonomic* metaphor covers all those approaches to self-concept dealing with the creation of identity, *eg,* the classification of self and others in terms of difference and similarity. The *anthropological* metaphor deals with the relationship between culture and self-concept. The *sociological* metaphor is concerned with those aspects of self-concept that are tied into the social roles and performances of individuals.

These three metaphors also highlight the systemic qualities of self-concept; identity as a *structural* component of self; culture providing the broad 'blueprint' for the holistic *or design* qualities of the person; the expectations and associated behaviours of others creating a *process* for the performance of roles. Representative fields and contributors to these metaphors are shown in Table 3 below.

Metaphor (External)	Derivative Question	Typical Theories	Typical Theorists
Sociological	How are social processes implicated in making self-concept operational?	Symbolic Interactionism	(Mead, 1934)
		Dramaturgical Models	(Goffman, 1975)
		Ethno Methodology	(Garfinkel, 1967)
Anthropological	How far is self-concept a cultural artefact?	Construction of Meaning	(Bruner, 1995)
Taxonomic/Indexical	On what basis do individuals lay claim to a social identity?	Categorization and Intergroup discrimination	(Tajfel, 1981)
		Taxonomic	(Deaux, 2000)

Table 3. Metaphors relating to the External world of the individual

Metaphors relating to the Internal and External world of the individual (the Boundary)

Three broad categories or groups of writers concern themselves with the internal and external aspects of self-concept. This way of conceptualising self-concept also employs the metaphor of the 'boundary', that region which is partly interior, partly exterior and which opens up further analogies concerning barriers, transfers and crossings.

First, the *social self* metaphor covers all those approaches to self-concept dealing with a person's unique sense of individuality. These theories are structural in nature and are developed using instruments similar to those in the geographic and social self contexts. Second, the *philosophical* metaphor is concerned with the construction of meaning and a search for understanding the nature of conscious awareness and self-awareness. These understandings form a kind of epistemological framework that gives meaning and direction, ie, a pattern for living, to the individuals' life world. Finally, the *dialogical* metaphor derives from those writers who explore the multiple nature of self-concept, arising out of dialogical processes and therefore this metaphor will stress the dynamic, process driven, aspect of self. Representative fields and contributors to these metaphors are shown in Table 4.

Metaphor (Internal & External)	Derivative Question	Typical Theories	Typical Theorists
Philosophical	How does self-concept emerge from the mind-body relationship?	Consciousness as mind Multiple drafts model of consciousness Values & Ethics	(Searle, 1994) (Dennett, 1996) (Hospers, 1995)
Dialogical	How is self-concept created through discourse and dialogue	The Plural Self Dialogical Self	(Bakhtin, 1986) (Shotter, 1999) (Herman, 1999) (Harre and Van Langenhove, 1999)
Social Self	How does the interplay of experience & inheritance affect self-concept in terms of personality and individual difference?	Trait Psychoanalytic Social Learning Humanistic	(Eysenck, 1953) (Cattell, 1963) (Kelly, 1955) (Jung, 1923) (Bandura, 1977) (Rogers, 1969) (Maslow, 1968)

Table 4 Metaphors relating to the Internal and External world of the individual (the Boundary**)**

Self-Concept - The Ecological Metaphor

A further metaphor of interest, which represents a growing, though disparate, body of literature, explores the idea of the person as a 'system' linked into a wider network of systems. Ecology is the science and discipline that explores the *interactive* relationship between people and their environment; its perspective is necessarily systems based, global and dynamic, and for those reasons, this group of writers and writing will be combined within the umbrella of *the ecological metaphor*. This metaphor addresses the question: how is self-concept regulated as a system?

The ecological metaphor contains a number of contributions from seemingly separate fields of study that are, nonetheless, connected. Representative fields and contributors to these metaphors are shown in Table 5.

Metaphor	Derivative Question	Typical Theories	Typical Theorists
(Ecological)	How is self-concept developed and regulated as a system	Cybernetic definitions of life	(Korzeniewski, 2001) (Capra, 1997)
		Autopoietic Self	(Maturana and Varela, 1980)
		Self-Regulation	(Ford, 1987) (Schunk and Zimmerman, 1994)
		Dynamic Self-Concept	(Markus and Wurf, 1987)

Table 5. Metaphors relating to the Ecological Metaphor

Sternberg's classification of Intelligence metaphors, Table 6 below, shows that Sternberg developed six metaphor groups plus an overall 'system' category. Within this study, however, nine metaphor groups have been identified for specific approaches to self-concept plus an overall 'systems' category based on an 'ecological' view of self-concept as a self-regulating system.

The degree of overlap is interesting, both approaches are comparable in five metaphors and both have an overall category based on systemic features.

Sternberg's Metaphors		Self-concept Metaphors	
Geographic	A theory of intelligence provides a map of the mind	Geographic	Self-concept as a map of an individuals abilities and skills
Computational	Mind as a computing device		
		Social	Self-concept in terms of traits and personality
Biological	Intelligence as a functioning of the brain	Biological	Self-concept as feelings and conscious awareness (arising out of brain functioning)
Epistemological	Intelligence based on Piaget's method of theorizing	Philosophical	Self-concept as mind, values and beliefs
Anthropological	Intelligence as a cultural invention	Anthropological	Self-concept as a cultural invention
Sociological	How socialization affects the development of intelligence	Sociological	Self-concept as performance in roles
		Narrative	Self-concept as individual life story
		Taxonomic	Self-concept as Identity
		Dialogical	Self concept created through dialogue
Systems	Intelligence in terms of the interaction of multiple Systems	Ecology	Self-concept as an autopoietic, self-regulating system.

Table 6. A comparison of metaphor groups for intelligence (Sternberg, 1997) and self- concept metaphors.

Whilst Sternberg does not have categories that equate to social, narrative, taxonomic and dialogical features of intelligence, it is precisely these aspects of self-concept that feature within situated perspectives on learning (Murphy, 1999, p ix). Individuals (for example, course members on long courses of training) will claim, and be claimed by others, to be certain kinds of learners, and the ways in which they behave as learners will both reflect and reinforce their own self-concept.

Self-Concept: a systems perspective

Sternberg's triarchic system represents one way of categorising metaphors relating to self-concept, there is another way, however, that has significance for this study. Part of the literature on self-concept (explored in more detail below) examines how living things exist as self-organised, self-regulating systems, (Maturana and Varela, 1980; and Ford, 1987), and in this study, self-concept too is presented as having systemic properties, in particular that it has *structure* and *pattern* and also *process* properties.

Figure 2, shows how Sternberg's Triarchic theory can be combined with the generic features of any system to provide a framework for examining metaphors concerning self-concept.
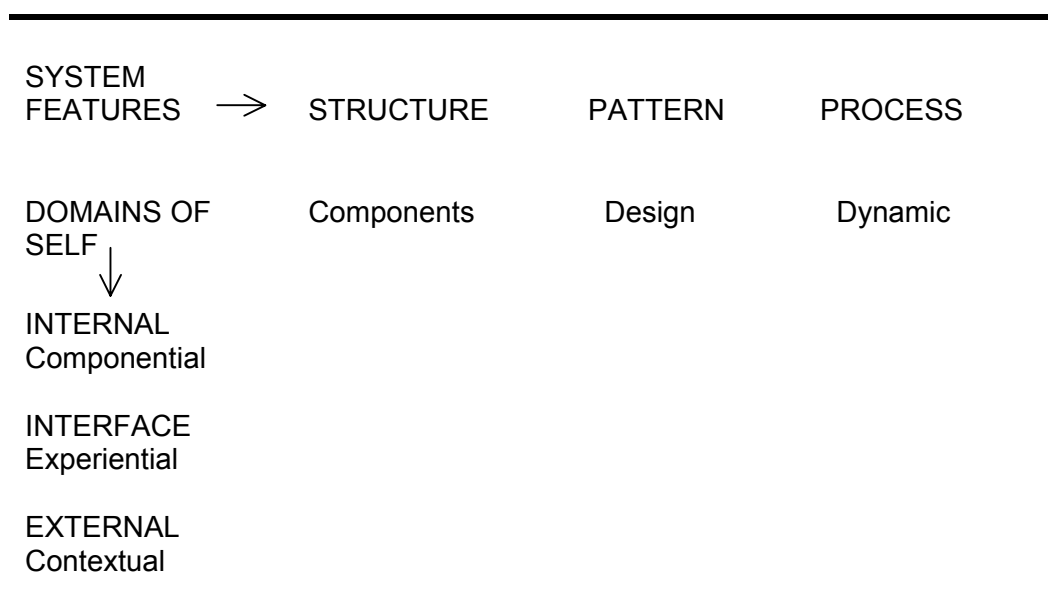
SYSTEM FEATURES →	STRUCTURE	PATTERN	PROCESS
DOMAINS OF SELF ↓	Components	Design	Dynamic
INTERNAL Componential			
INTERFACE Experiential			
EXTERNAL Contextual			

Figure 2. Model for analysing the components of self-concept

Using this framework, the metaphors derived for self-concept can now be arranged according to their relationship with system features and boundary features, Table 7 groups the metaphors accordingly.

Table 7 can be used to express ideas and understandings about different aspects of self-concept. Displayed like this, the interconnected and systemic nature of self-concept becomes very clear, each part impacts on all of the others, there is no 'top' or ''bottom' and it resembles a matrix more than a hierarchy. This is the networked self and the systemic properties of the self. This is reviewed briefly in the next section.

	Inner World of Self	Interface	External World of Self
Structure	Abilities & Skills	Personality	Identity
	GEOGRAPHIC METAPHOR	SOCIAL SELF METAPHOR	TAXONOMIC METAPHOR
Pattern (Design)	Feelings & Conscious Awareness	Mind, Values & Beliefs	Culture
	BIOLOGICAL METAPHOR	PHILOSOPHICAL METAPHOR	ANTHROPOLOGICAL METAPHOR
Process	Individual Life Story	Dialogue	Performance
	NARRATIVE METAPHOR	DIALOGICAL METAPHOR	SOCIOLOGICAL METAPHOR

Table 7. A conceptual framework encompassing metaphors concerning self-concept

The systemic nature of Self-Concept

All living things are examples of unitary, organised, dynamical systems in which "the product of its operation is its own organization" (Maturana and Varela, 1980, p 82), and a defining feature of all dynamical systems is *self-organisation*, a process that enables the system to exist and maintain itself, in a stable state, away from equilibrium, for long periods of time(Capra, 1997, p 112; Korzeniewski, 2001, p 279). Views such as those of Capra (above) derive from systems work carried out earlier by Bertanlanffy who suggested that "living systems are 'open' systems which maintain themselves in a 'steady state' far from equilibrium by a continual 'flow/exchange' of energy with the environment" (Bertalanffy, 1968, p 84). Because the natural equilibrium state for a human is death, over an entire lifetime, from conception to old age, the individual has to work very hard to stay alive.

The 'process of daily living', as a term, is used to describe all those actions and intentions designed to satisfy individual, and collective, daily needs and to ensure long term survival, (Roper, 1985). Biologically, the human system is dissipative in nature, left alone, it will literally disintegrate (Prigogine and Stengers, 1984, in Korzeniewski, 2001, p 275). However, in the case of human existence, the opposite appears to be the case; psychologically, humans grow, develop and reconstruct themselves, people are not only self-organising, they are self-constructing too (Ford, 1987).

Self-regulation, as a process encompassing self-organisation and self-construction, clearly needs to be able to accommodate personal change as well as reproduction. In the context of examining literary character, in a project he calls the 'invention of the human', Harold Bloom captures very well the reflective essence of *self-regulation* in his proposition that in Shakespeare, characters develop, rather than unfold. He argues that they develop because they sometimes *overhear* themselves talking, either to themselves or to others, and in so doing find their own "royal road" to individuation (Bloom, 1999, p xvii).

In the context of self-regulation within a particular learning activity, for example, it is here that the difference between 'unfolding' and 'development' becomes evident. Self-regulation makes use of self-concept to link motivation and learning theory in order to provide dynamic explanations for learners' behaviours. As Zimmerman suggests;

> "Self-regulation refers to the degree that individuals are metacognitively, motivationally, and behaviourally active participants in their own learning process" (Zimmerman, 1994, p 3).

This is the equivalent of learners 'overhearing' their own engagement with the learning task and changing (reconceiving) their behaviour accordingly. In educational settings and situations, therefore, self-regulation used in this way appears to ensure a core 'stability' that is capable of holding the system together (Markus and Wurf, 1987, p 306).

Capra (1997) elaborated on the concept of self-regulation and self-organisation and developed his notion of a 'web of life' supporting living things, especially human beings, through *structural coup*ling with the environment. Structural coupling suggests that each being or person is a system that has its own boundary, and exchanges across the boundary will involve physical, social and intellectual dimensions that are needed to support the process of daily living. This is the essence of the *autopoietic self* (Maturana and Varela, 1980 in Capra, 1997, p 214) and it finds resonance in the 3 X 3 matrix used to examine the systems, internal, external and interface aspects of self-concept above in Table 7.

Introducing Dynamics (Process) into Self-Concept

This review has, so far, established a framework for examining self-concept that is comprehensive though essentially descriptive in nature. The next section introduces a mechanism or process that has the capability for 'powering' the system and thus providing the dynamic element to complement *structure* and *design*. It does this by using ideas from Life Span Developmental Psychology (LSDP) and introduces two important *process* based ideas. First, the notion of the life course as an evolving structure, and second, the concept of the developmental life task. The final section presents 'Possible Selves' as the dynamic element within the life world, the 'process driver' that powers the system.

Life Span Developmental Psychology (LSDP)

LSDP includes biological, physiological and historical perspectives on life and living and is "concerned with the description, explanation, and modification (optimisation) of developmental processes in the human life course from conception to death" (Sugarman, 1996, pp 287-288). LSDP therefore provides useful material for descriptions of self-concept and typologies of change. In the examination of the life 'trajectory' Sugarman makes a distinction between two differing accounts of the human life course. One view espouses the 'natural' unfolding of life stages as being invariant, universal and cumulative, The other, alternative perspective, highlights the chaotic nature of many significant life events. (Sugarman, 1996, p 290) also refers directly to (Baltes, Reese and Lipsett, 1980) when he suggests that there are three main categories of change across the life course:

- Normative age related changes (universal age graded);
- Normative history graded changes (shared by a culture or generation);
- Non-normative changes (not associated with any particular age or life stage).

What this means is that within any particular culture, there will be traditional 'milestones' and markers that signpost a persons progress across the life course. These markers will anticipate, or celebrate, events that have meaning for individuals and social groups, *eg,* birthdays, rites of passage. LSDP, therefore, provides a useful initial classification of personal change within the life course. This is summarised in Table 8 below.

View 1 Life course as an invariant ordered succession of stages	Universal age graded changes	Three sources of order across the life course:
	Age graded changes shared by a culture or generation	- Maturational processes - Social & environmental forces
View 2 Life course as a chaotic process of change	Changes that are not associated with any particular age or life stage	- Individual creativity

Table 8. Classification of change according to LSDP – based on (Sugarman, 1996)

The typology in table 8 is essentially, descriptive; to examine how the life course operates in terms of agency, transformation and direction, however, (Sugarman, 1996) introduces two more, important, ideas:

- The notion of the life course as an Evolving Structure
- The concept of the Developmental Task

Life structure, defined as the underlying pattern or design of a person's life at a given time, is said to evolve through an alternating series of structure building and structure changing (transitional) periods. Developmental tasks are described as the issues addressed during each phase of structure building and structure changing. Each of these tasks are associated with particular points in the life course and their resolution is said to contribute towards growth.

There is an obvious resonance between the idea of an evolving life structure and an autopoietic structure. Capra defines autopoiesis as a 'network pattern in which the function of each component is to participate in the production or transformation of the other components'. The autopoietic network is 'self bounded, self-generating and self-perpetuating' (Capra, 1997, pp 202-203).

Both have a trajectory over time, both have an apparent (fixed) shape and form in the short run, but both can change in the long run through a process of transformations and transitions. Humans are autopoietic systems and in the process of daily living undertake all those intellectual, social and physical activities needed to create and maintain both the self and the life world. What is it, however, that drives and directs the process of daily living?
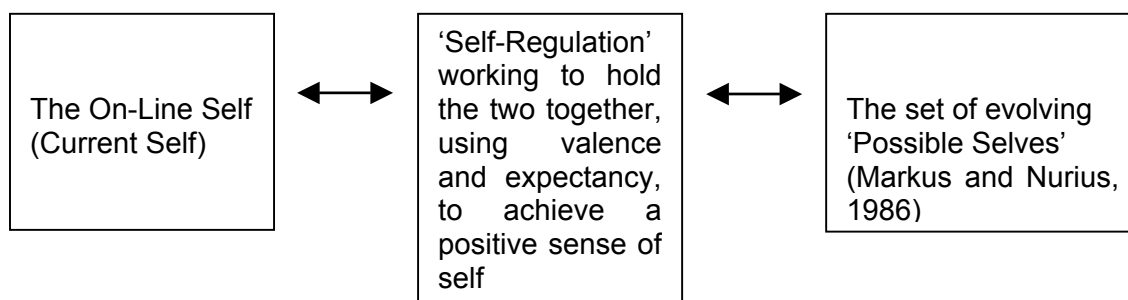
Self-concept, life world and life structure all appear to be analogous one to another such that the process that drives one will be driving them all. The prime candidate for this central

process 'driver' appears to be the concept of *Possible Selves,* (Markus and Nurius, 1986), and this is considered next.

Possible Selves – the driving force within Self-Concept

Inside the life-world, the idea of Possible Selves provides a powerful mechanism, or 'incentive', for influencing individual action (Markus and Nurius, 1986 p960). Possible selves represent imagined possibilities and potential states of being and some of these will be desired and others less so, or actually feared. Accordingly, individuals will regulate their behaviour and actions in order to achieve desired possible selves and to avoid other, less desirable, possible selves. Hoskins and Leseho describe possible selves as a *cognitive bridge* between the plans of the now self and the future self (1996, p 247). The visualisation of the future self influences the operation of the current 'working self concept' (Markus and Nurius, 1986, p 957). Therefore, possible selves should play a central, systemic, role in the operation (self-regulation) of self-concept on a day to day basis. The idea of self-regulation and its connection with possible selves is illustrated below in Figure 3.

The Life World as an Autopoietic System (Maturana and Varela, 1980)

The On-Line Self (Current Self)	⟷	'Self-Regulation' working to hold the two together, using valence and expectancy, to achieve a positive sense of self	⟷	The set of evolving 'Possible Selves' (Markus and Nurius, 1986)

The Dynamic Self-Concept (Markus and Wurf, 1987)

Figure 3. Possible Selves – a dynamic for change

In Figure 3 the autopoietic self operates within its own 'boundary', which can be taken to be the life-world, and at the heart of the process, self-regulation drives the system of possible selves. Not all possible selves will be equally desirable, or even if desirable, considered worthwhile or achievable; therefore, the regulation of possible selves will need some form of evaluative criteria.

One set of ideas drawn from a study of the *process* of motivation theory is particularly relevant here; Vroom and Lawler in the 1960s examined workers ideas about the *perceived realities* of their working lives and developed what became known as 'Expectancy Theory'.

The core of 'Expectancy Theory' relates to how a person perceives the relationships between three things – effort, performance and rewards. The strength of the attraction of a particular outcome (*eg,* some possible self) is termed *valence,* whereas the degree of belief that a particular act (*eg,* a developmental life task) will produce a particular outcome, is termed *expectancy.* Valences and expectancies will depend on the individual's perception of a situation (Vroom, 1964), and this perceptual, reflexive, understanding about the chances of a life task leading or contributing to, a desired possible self is an important part of the self-

regulation process. Valence and expectancy, therefore, would provide the evaluative component of Possible Selves necessary for decisions concerning choice of action.

Conclusions

The overall purpose of the review, as indicated earlier, was to examine the systemic (dynamic) nature of self-concept to determine how the experience, and associated understandings, of change(s) in self-concept might be researched amongst BT's undertaking a long course of education and training. The review suggests that:

- Self-concept operates as a self-organising and self-regulating system using feedback in order to create more orderly structures and to learn as it grows (Johnson, 2001, p 121);
- Self-concept is analogous to the life world and both are 'powered' by a process of self-regulation applied to the domain of possible selves. This mirrors the proposal by (Lewis, 2003, p 234) that the self is "generated in dialogue that is structured around metaphors of embodiment in space and time".

The literature explored in this review has shown that self-concept has been extensively described and researched across a number of fields. However, it has also shown that the many metaphors underpinning various theories can be ordered and classified according to their relationship with generic system features (structure, pattern, process) and boundary features (internal, external and interface). This formed a coherent and unified conceptual framework as shown in Table 7. Examination of the resulting matrix of relationships in this table can be used to further the scope of theories concerning self-concept and change and to address associated research questions (Kukla, 2001, p 79).

The overall research question for which this literature review was undertaken asked:

How do BT's experience and understand change(s) in their own self-concept as they move through a long course of Initial Teacher Training (ITT)?

From this starting point a number of associated questions could be investigated, informed by the approaches described earlier. These would be:

- How is one BT's self-concept or life world different from or similar to another's? How is a single self-concept different at different points in time?
- How do BT's self-concept, and the associated life world, undergo transformation and change; also, what factors facilitate or inhibit change and or development?
- How is a BT's self-concept regulated and what is the role of possible selves in this process? How is valence and expectancy linked to the feedback and control process?
- How is the trajectory of the life course perceived by the BT in terms of direction, eg, is it progressive, regressive or circular?

By reflecting on, or as Bloom (1999) might put it, *overhearing,* how they choose to answer some or all of these questions, the BT's involved may well be helped along their own personal road to individuation and to develop, rather than unfold, in the process.

References

Bakhtin, M. (1986) *Speech genre and other essays*. Austin: University of Texas Press.

Baltes, P. B., Reese, H. W. and Lipsett, L. P. (1980) Life-span developmental psychology. *Annual Review Psychology,* 31*,* 65-110.

Bandura, A. (1977) *Social Learning Theory*. Eaglewood Cliffs, NJ: PrenticeHall.

Bernstein, B. (2000) *Pedagogy, Symbolic Control and Identity: Theory, Research and Critique.* London: Taylor and Francis.

Bertalanffy, L. V. (1968) *General System Theory*. New York: Braziller.

Bloom, H. (1999) *Shakespeare The Invention of the Human*. London: Fourth Estate.

Bruner, J. (1995) *Acts of Meaning*. (7th ed.). London: Harvard University Press.

Byrne, B. M. (1984) The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research,* 54*,* 427-456.

Capra, F. (1997) *The Web of Life: A new synthesis of mind and matter*. London: Flamingo.

Carlsen, M. B. (1988) *Meaning-making: Therapeutic processes in adult development*. New York: Norton.

Carter, R. (1998) *Mapping the Mind*. London: Weidenfeld & Nicolson.

Cattell, R. B. (1963) Theory of Fluid and Crystallized Intelligence: A Critical Experiment. *Journal of Educational Psychology,* 54*,* 1-22.

Cushman, P. (1990) Why the self is empty: Toward a historically situated psychology. *American Psychologist,* 45*,* 599-611.

Deaux, K. (2000) Models, Meanings and Motivations, in D. Capozza and R. Brown (eds) *Social Identity Processes*. London: Sage Publications.

Dennett, D. C. (1996) *Kinds of Minds: Towards an Understanding of Consciousness*. London: Weidenfeld and Nicolson.

Eysenck, H. J. (1953) *The Structure of Human Personality*. London: Methuen.

Ford, D. H. (1987) *Humans as Self-Constructing Living Systems. A Developmental Perspective on Behaviour and Personality*. New Jersey: Lawrence Erlbaum Associates.

Garfinkel, H. (1967) *Studies in Ethnomethodology*. Englewood Cliffs NJ: Prentice-Hall.

Gergen, K. J. (1991) *The saturated self*. New York: Basic Books.

Goffman, E. (1975) *The Presentation of Self in Everyday Life.* London: Penguin Books.

Greenfield, S. (2000) *The Private Life of the Brain*. London: Penguin Books.

Greenfield, S. (2002, 2 February) Sensational Minds. *New Scientist,* 173, 30-33.

Harre, R. (1987) The social construction of selves, in K. Yardley and T. Honess (eds) *Self and Identity: Psychosocial perspectives* (pp. 41-52). Chichester: Wiley.

Harre, R. (1989) The self as a theoretical concept, in M. Krausz (ed) *Relativism: Interpretation and confrontation* (pp 389-411). Notre Dame, IN: University of Notre Dame Press.

Harre, R. and Van Langenhove, L. (1999) *Positioning Theory*. Oxford: Blackwell.

Herman, H. (1999) in J. Rowan and M. Cooper (eds) *The Plural Self*. London: Sage Publications.

Hermans, H. J. M. and Kempen, H. J. (1993) *The dialogical self*. San Diego, CA: Academic Press.

Hoge, R. D. and Renzulli, J. S. (1993) Exploring the Link between Giftedness and Self-Concept'. *Review of Educational Research,* 63*,* 449-465.

Hoskins, M. and Leseho, J. (1996) Changing Metaphors of the Self: Implications for Counseling. *Journal of Counseling and Development,* 74*,* 243-252.

Hospers, J. (1995) *An Introduction to Philosophical Analysis*. (3rd ed.). London: Routledge.

Howard, G. S. (1991) Culture tales: A narrative to thinking, cross-cultural psychology, and psychotherapy. *American Psychologist,* 46*,* 187-197.

Johnson, S. (2001) *Emergence*. London: Allen Lane The Penguin Press.

Jung, C. G. (1923) *Psychological Types*. London: Routledge and Kegan Paul.

Kelly, G. A. (1955) *The Psychology of Personal Constructs* (Vols. 1 & 2) New York: Norton.

Kohut, H. (1977) *The restoration of the self*. New York: International Universities Press.

Korzeniewski, B. (2001) Cybernetic Formulation of the Definition of Life. *Journal of Theoretical Biology,* 209*,* 275-286.

Kukla, A. (2001) *Methods of Theoretical Psychology*. Cambridge, Massachusetts: The MIT Press.

Lankard, B. (1993) *Career Development through Self-Renewal: ERIC Clearinghouse on Adult, Career and Vocational Education*. Columbus, OH: ERIC Digest.

Leseho, J. and Howard-Rose, D. (1994) *Anger in the Classroom: A practical guide for teachers*. Calgary, Alberta: Detselig Ltd.

Lewis, Y. (2003) The self as a moral concept. *British Journal of Social Psychology,* 42*,* 225-237.

Maclure, M. (1993) Arguing for Your Self: identity as an organising principle in teachers' jobs and lives. *British Educational Research Journal,* 19*,* 311-322.

Mahoney, M. (1991) *Human change processes: The scientific foundations of psychotherapy*. New York: Basic Books.

Mair, M. (1977) The community of self, in D. Bannister (ed) *New perspectives in personal construct theory*. London: Academic Press.

Markus, H. and Nurius, P. (1986) Possible Selves. *American Psychologist,* 41*,* 954-969.

Markus, H. and Wurf, E. (1987) The Dynamic Self-Concept: A Social Psychological Perspective. *Annual Review Psychology,* 38*,* 299-337.

Marsh, H. W. (1993) The Multidimensional Structure of Academic Self-Concept: Invariance over Gender and Age. *American Educational Research Journal,* 30*,* 841-860.

Marsh, H. W. and Hattie, J. (1996) Theoretical Perspectives on the Structure of Self-Concept, in B. A. Bracken (ed) *Handbook of Self-Concept* (pp 38-90). New York: John Wiley and Sons.

Martin, J. and Sugarman, J. (2001) Is the Self a Kind of Understanding? *Journal for the Theory of Social Behaviour,* 31*,* 103-114.

Maslow, A. H. (1968) *Towards a Psychology of Being*. (2nd ed.). New Jersey: Van Nostrand.

Maturana, H. R. and Varela, F. J. (1980) *Autopoiesis and Cognition The Realization of the Living*. (Vol. 42). Dordrecht, Holland: D. Reidel Publishing Company.

McAdams, D. P. (1993) *The Stories We Live By*. New York: The Guilford Press.

Mead, G. H. (1934) *Mind, self, and society*. Chicago: University of Chicago Press.

Moustakas, C. E. (1966) *The authentic teacher*. Cambridge MA: H. A. Doyle.

Murphy, P. (ed) (1999) *Learners, Learning and Assessment*. Milton Keynes: Paul Chapman and The Open University.

Prigogine, I. and Stengers, I. (1984) *Order out of Chaos*. New York: Bantam Books.

Rogers, C. (1969) *Freedom to Learn*. Westerville, Ohio: Merrill.

Roper, N. (1985) *The Elements of Nursing*. (2nd ed.). Edinburgh: Churchil Livingstone.

Sacks, O. (1986) The Man Who Mistook his Wife for a Hat. London: PICADOR.

Schon, D. A. (1983) *The Reflective Practitioner: How Professionals Think in Action*. Aldershot: Avebury.

Schunk, D. H. and Zimmerman, B. J. (eds) (1994) *Self-Regulation of Learning and Performance*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Searle, J. R. (1994) *The Rediscovery of the Mind*. London: The MIT Press.

Shavelson, R. J., Hubner, J. J. and Stanton, G. C. (1976) Validation of construct interpretations. *Review of Educational Research,* 46*,* 407-441.

Shotter, J. (1999) Life inside dialogically structured mentalities, in J. Rowan and M. Cooper (eds) *The Plural Self* (pp 71-92). London: Sage Publications.

Sternberg, R. J. (1997) *Metaphors of Mind Conceptions of the Nature of Intelligence*. Cambridge: Cambridge University Press.

Stone, H. and Winkelman, S. (1989) *Embracing our selves*. San Raphael, CA: New World Library.

Sugarman, L. (1996) Narratives of Theory and Practice: the Psychology of Life-Span Development, in R. Woolfe and W. Dryden (eds) *Handbook of Counselling Psychology* (pp 287-306). London: Sage Publications.

Tajfel, H. (1981) *Human Groups and Social Categories*. Cambridge: Cambridge University Press.

Vroom, V. H. (1964) *Work and Motivation*. New York: Wiley.

Wertsch, J. V., Del Rio, P. and Alvaraz, A. (eds) (1995) *Sociocultural studies of mind*. Cambridge: Cambridge University Press.

Zimmerman, B. J. (1994) Dimensions of Academic Self-Regulation: A Conceptual framework for Education, in D. H. Schunk and B. J. Zimmerman (eds) *Self-Regulation of Learning and performance*. Hillsdale, NJ: Lawrence Erlbaum Associates.