

An Introduction to Mindset Theory

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Abstract

The plural agency is a self-referential, self-regulating, self-organising, adaptive, proactive and culturally stable collective, having a normative personality belonging to a psychosocial framework of the “collective mind.” The agency can be characterised by *Mindset* types, a derivative of Maruyama’s *Mindscape* meta-theory - a little known but powerful epistemic approach that can anticipate an agency’s patterns of behaviour and demands. A *Mindscape* is a construct from which coherent sets of behavioural mindsets can emerge. However, *Mindscape* theory lacks generative transparency, and the *Mindset* theory we develop changes this. *Mindset Theory* is based on the Sagiv-Schwartz (2007) cultural values study from which 8 *Mindset* types are generated that individually or in combination can characterise personality and anticipate behaviour.

Keywords: Mindsets, Mindscapes, Traits, Jungian psychological functions, Attitude, Temperament, Self-organisation, Adaptation.

Introduction

This paper is interested in two aspects of personality: a theory of personality that indicates its nature, how it functions, and an identification of variables that might represent its major characteristics, and personality assessment through an ability to identify and evaluate these variables. Our purpose in this paper covers both of these attributes. In respect of the first, we aim at creating a dynamic socio-cognitive theory of human agency having as its core a *normative personality*.

When we refer to *normative personality*, we do not mean this within the context of the ambient normative social *influences* that exist during the formation of personalities and that *mould* them (Mroczek & Little, 2006). Rather, the term is being used to refer to the norms in a collective that may together coalesce into a unitary cognitive structure such that a collective mind can be inferred, and from which an *emergent* normative personality arises. To explain this further, consider that a potentially durable collective develops a dominant culture within which shared beliefs arise in relation to its capacity to produce desired operative outcomes. Cultural anchors arise which enable the development of formal and informal norms to which patterns of behaviour, modes of conduct and expression, forms of thought, attitudes, and values are more or less adhered to by those that compose the plural agency. When the norms refer to formal behaviours, then where the members of the collective contravene them, they are deemed to be engaging in illegitimate behaviour which, if discovered, may result in formal retribution - the severity of which is determined from the agency’s ideological and ethical positioning. This occurs with the rise of collective cognitive processes that start with information inputs and through communication and decision processes result in orientation towards action; and it does this with a sense of the collective mind and self. It is a short step to recognise that the collective mind has associated with it a normative personality. Where a normative personality is deemed to exist, it does not necessarily mean that individual members of the collective will all conform to all aspects of the normative processes: they may only do so “more or less.” According to Yolles (2009), as long as a plural agency has a durable culture to which participants more or less conform through its norms, a “collective mind” is

implied that operates through meaningful dialogue and agreement. As such the plural agency may appear to behave more or less like a singular cognitive agency. While the plural agency is ultimately composed of singular agencies, they are similar, can suffer from related pathologies that include: dysfunctions, neuroses, feelings of guilt, adopt and maintain collective psychological defences that reduce pain through denial and cover-up, and operate through processes of power that might be unproductive (Kets de Vries, 1991).

In the same way that singular agencies learn, so do plural agencies. We represent this capacity of the normative personality through cognitive learning theory (e.g., Miller & Dollard, 1941; Miller et al., 1960; Piaget, 1950; Vygotsky, 1978; Argyris & Schön, 1978; Bandura, 1991; Nobre, 2003; Argote & Todorova, 2007), where “learning is seen in terms of the acquisition or reorganization of the cognitive structures through which agencies process and store information” (Good and Brophy, 1990, pp. 187). Set within cognitive information process theory, the collective mind is seen as an information system that operates through a set of logical mental rules, and strategies (e.g., Atkinson & Shiffrin, 1968; Bowlby, 1980; Novak, 1993; Wang, 2007).

In this paper we adopt a theoretical approach intended to represent the personality through a set of traits, and we develop *Mindset* theory as a means by which normative personalities can be assessed. Mindset theory is a derivative of Mindscape theory, a little known approach for reasons that likely include its lack of generative transparency. In order to correct this we will create Mindset theory by adopting the cybernetic trait model of Yolles, Fink & Dauber (2011). Then, to facilitate assessment we connect this with the extensive empirical study by Shalom Schwartz (e.g., Sagiv-Schwarz, 2007) on epistemic cultural values. In particular we shall show that normative personalities can take Mindscape types which can be transparently generated from combinations of bi-polar traits that arise from Sagiv-Schwartz theory.

Having referred to traits, it is useful to consider something more about them. A trait is usually seen as a distinguishing feature, characteristic or quality of a personality style. It creates a predisposition for a personality to respond in a particular way to a broad range of situations (Allport, 1961). Traits are also described as enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts. They constitute habitual patterns of thought, emotion and stable clusters of behaviour. They are therefore better seen as constructs that reflect different sets of values and attitudes. There may be a variety of traits, but we can also identify super-traits (Bandura, 1999) or global traits (Van Egeren, 2009) which play a formative role in the development of personality. These formative traits are constituted as self-regulatory propensities or styles that affect how individuals characteristically pursue their goals (Van Egeren, 2009). In this paper when we refer to traits, we shall mean formative traits. These operate as continuous variables that together are indicative of personality, and are subject to small degrees of continuous variation. Traits may take scalar values that for Eysenck (1957) determine personality type. As an illustration, the Five Factor Method (FFM¹ or the Big Five) is an empirically based classificatory trait approach where the traits take on single pole and bi-polar values (Cattell, 1945; Goldberg, 1993; Costa & McCrae 1992).

Normally, type theory is useful in personality assessment since they represent conditions of a personality that can be associated with a set of characteristics or properties that establish a penchant towards certain patterns of behaviour. There are schemas (models that may or may not be developed into or be connected with full theories) that explore types, though sometimes as in the MBTI (Myers, 2000) schema the traits are inferred as existing virtually, and unspecified. While explicitly defined traits take on identifiable personality control functions, virtual traits also take on control functions, but in this case they would be implicit and unidentified (Gottfredson & Hirschi, 1990).

While traits constitute useful variables for the characterisation of personality, there is some confusion in the literature in the way that types are defined. Some authors (e.g. Eysenck, 1957) find that simple distinguishing marks may qualify single traits as types, while Myers-Briggs when referring to types means meta-types, i.e. a determinable collection of types (Myers, 2000). Following Eysenck, types can be defined through a trait that can characterize a system. If more than a single trait is needed to characterize a system, then types may occur as some composite of several traits with certain distinguishing marks. Thus for instance consider the case of the extreme poles of bi-polar traits. The number of types (z) to be generated from bi-polar traits depends on the number of traits (n) that constitute a system: $z = 2^n$. In a case where three states of a trait (e.g., the extremes and a range in the middle) constitute a system, then $z = 3^n$. We have already referred to MBTI as a “personality type” approach with virtual traits, and which operates as a classificatory system that was created from Jung’s (1923) bi-polar temperament personality theory. From 4 bi-polar virtual traits, a system of 16 personality types was created by Myers-Briggs (Myers & McCaulley, 1985; Myers, McCaulley, Quenk & Hammer, 1998).

While personality traits create a potential for the generation of descriptive clusters of behaviour, many consider them to represent the ultimate causes of patterns of behaviour. However, if such a view is to be sustainable, then additional theory is needed that ties trait schemas that simply classify personalities to one type or another, to dynamic schemas that involve causative processes and allow for personality shifts, as for instance through: (a) Piaget’s (1950) concepts of child development and Bandura’s (2006) psychology of the human agency that would allow traits to take a role that is significantly beyond their use as classification systems; and (b) Piaget’s ideas of intelligent behaviour and Bandura’s interest in efficacy and performance that establish ideas of change in behaviour through learning that existing trait theories are unable to currently represent. It may be possible for trait theory to embrace such concepts by seeing them as enduring patterns of cognitive schemas that arise from such phenomena as perceiving, relating to, and thinking about the environment and oneself, i.e., they condition decision making processes in some way. Action then emerges from the major processes of cognition, motivation, affect, effectiveness recognition, and selection of available patterns of behaviour.

Personality Theory, Pathologies and Personality Disorder

Personality indicators have become important because of the belief that they provide a way connecting the demands of given social and task environments with potential individual behaviour, performance and misbehaviour (Bandura, 1999a). Given appropriate theory and a proper understanding of its pragmatic utility, the anticipation of patterns of agency behaviour through personality evaluations is feasible.

Jung’s temperament theory indicates how a personality can be represented by temperament types, and this enables one to establish a theory of personality differences. Ryckman (2004) noted that Jung’s theory models personality as a dynamic and organised set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviours in various situations. It is these cognitions that provide for agency capacities for information processing through its psychological “functions.” By behaviour is meant the actions or reactions of cognitive individuals in relation to what they perceive within their internal and external environments. The behaviour may be conscious-unconscious, overt-covert, or voluntary-involuntary. Jung’s theory of temperament acts as the basis for personality function theories, like that of the MBTI schema. Thus for instance, in their study of MBTI when Myers et al. (1998) refer to behaviour, they are more interested in decision making behaviour that connects with the mental function (e.g. of judging) and which leads to overt behaviour. Here, seemingly random variation in individual behaviours is seen as

orderly and consistent due to distinctions in the ways they tend to use their mental functions (like perception and judgment). Other theoretical approaches like those of trait theorists (Heinström, 2003) or cognitive theorists (Baron, 1982) often tend to be concerned directly with overt behaviour – and here mental functions (like judgment) are not part of their consideration.

Jung established a basis for the development of a cognitive theory of personality. It became the entry point for a number of other schemas for personality that centre on personality differences between individuals. They include the Myers-Briggs Type Inventory (MBTI) schema and its close relative Socionics linking Jung's conceptualisations with those of Freud and Kepinski (Müller, Malsch & Schulz-Schaeffer, 1998). Other schemas include the Five Factor Method (Cattell, 1945), often referred to as FFM or the Big Five. There is a main distinction in the approaches adopted by MBTI and FFM: the former is a typology (i.e., identifying personality *types*) of personality preference patterns (Cody, 1996), and the latter is a *trait* approach that indicates a personality framework of indicative variables. The two approaches are not mutually exclusive, since the states that traits variables adopt can be represented as types (Eysenck, 1957).

Support for the possibility of creating theory that links personality indicators with behaviour has not always been as strong as it is now. Social psychologists (e.g., Mischel, 1968) argue that behaviour varies with context, a proposition that has been to some extent evidenced (Krupat, 2006). Theorists in the 1960s and 1970s suggested that predicting behaviour by personality tests was impossible; an explanation for this by some behavioural theorists was that personality is a perceived construct that people impose on others in order to maintain an illusion of consistency in the world. However, by the 1980s, it was realised that while predicting single instances of behaviour may be unreliable, patterns of behaviour could be identified from an aggregate of large numbers of observations. More generally, patterns are generically defined as an abstraction that keeps recurring in specific, non-arbitrary contexts. As such anticipations of patterns of behaviour are possible even when an agency is subject to interaction that occurs between personal and situational variables. Another realisation has also developed: that where it is possible to associate personalities with stable preferences, a consistent connection to behaviour can be discerned (de Oliveira et al., 2008; Hyldegård, 2009).

We have already noted that there are two facets of the study of personality of interest here. One concerns the theory of personality *functioning* and its representation through a number of variables (and for instance how these combine in their relationship to internalizing and externalizing personality disorders: Carver, 2005). This ultimately reflects the personal narratives that individuals construct over the course of their lives (Cervone, Shadel & Jencius, 2001; McAdams, 1996 & 2001; Tomkins, 1979). The other concerning personality *assessment* operates through the identification and provision of a set of personality indicators, which in many cases are constituted as personality variables. Assessment concerns a set of beliefs about the internal psychological structures and overt behavioural tendencies that are identified as having to be measured, and the procedures that are required to measure them. Personality functioning and personality assessment are intertwined, and manifested as the likelihood for behaviour through the use of personality indicators. When personality has pathological conditions that result in problematic behaviour considered to constitute disorders, then assessment often refers to problem diagnosis and treatment.

There is a divide between modern socio-cognitive approaches to personality assessment and trait and types approaches, even though they can in principle be related (Eysenck, 1957; Van Egeren, 2009). Our interest here lies in agency theory, which can be modelled as systems that have “the cognitive capacities of intention, forethought and the ability to react and to reflect, and from these capacities comes the *agentic perspective* through which adaptation and change in human development occurs. To be an agent is to influence intentionally one's functioning and life circumstances, and personal

influence is part of the causal structure. Agential systems are seen to be self-organizing, proactive, self-regulating, and self-reflecting, and they are participative in creating their own behaviour and contributors to their life circumstances” (Yolles, Fink & Dauber, 2011, p637).

Agency is complex, and modelling its effective functionality requires theoretical pluralism (Bandura, 2008). However, the very plurality of personality theories (or more generally schemas) that coexist (Carver, 2005) create a fragmented spectrum of uncertainty due to their unrelated conceptualisation and terminology, and which together demonstrate an undeveloped theoretical understanding of the nature of personality (e.g., Sharpley, 2006). For instance, Bandura’s (1999, p. 229) socio-cognitive theory sees the agency as an autonomous system that interacts dynamically with its social environments. In contrast the trait schemas of personality like FFM tend to be devoid of contextual connection, and have a static rather than dynamic nature (Bandura, 1986).

Human Agency and Socio-Cognitive Theories of Personality

There are a variety of theoretical facets to organisational theory (e.g., Langford, Reynolds and Kehoe, 2009), but there does appear to be a significant gap in the literature relating to the plural agency as a singular entity (related to the idea of the first person plural: Sellars, 1963) which, if adequately considered, would likely lead on to the notion of the collective mind and its associated normative personality. The most promising area of work to develop such theory due to its general (systemic) nature comes from social cognitive theory, which considers personality to be a complex system (Bandura, 1999 & 1999a; Cervone et al., 2004). Socio-cognitive variables develop through socio-cultural experiences. They distinguish between cognitive capacities that contribute to personality functioning, including skills, competencies, knowledge structures that have been sedimented from the real life situations that have been experienced, self-reflective processes that enable people to develop beliefs about themselves within social contexts, and self-regulatory processes where people formulate goals, standards and motivations toward identifiable outcomes (Bandura, 1986, 1999; Williams, 1992). Personality assessment differentiates between personality structures and behavioural orientations. Internal structures are assessed through an examination of a system of interacting psychological mechanisms (rather than a set of independent variables as in trait approaches) while the dispositions are connected with contextual variety. In social-cognitive theory, personality assessments capture not only current psychological tendencies, but also personal determinants of action that contribute to development over the course of time. Evaluations are made of individual differences as well of the psychological attributes that contribute to personal identity. Ways in which the structures of personality come into play are illustrated as individuals interact with the settings and challenges that make up their day-to-day lives. Social-cognitive personality assessment seeks to explore individual personality coherence, and assessments explore the cognitive structures that are used to interpret events, and not only to self-reflect and self-regulate, but also to self-organise and adapt. Personality assessment often seeks psychological change, when it attempts to identify psychological qualities that where appropriate can be modified or developed.

Bandura’s (1986) socio-cognitive theory arose through his considerations of social learning, and he recognised that socio-cognitive processes were influenced by memory and emotions, and they are interactive with environmental influences. Behaviour is also seen to be guided by cognitive processes like the Jungian enantiomers² of thinking and judging that develop about the world and other people. Scott Murray (2005) noted that Bandura began from a behaviourist base to develop a theory of self that explored the complex psychological and subjective reality of individuals as it impacts on goals and expectations and points towards individual strategies. These were seen to be used to satisfy expectations and accomplish meaningful subjective goals, and to induce the affective representation of a problem. It can be seen as a theory of individual differences (Bandura, 1999).

In contrast, Piaget (1950) developed a theory of human commonalities that has been successful in exploring sensorimotor, logical, and thinking skills while not having shown to be equally useful for analysing individual differences in adult performance (Scott Murray et al., 2005). It has also been subject to further development (Labouvie-Vief, 1992; Blanchard-Fields & Norris, 1994), particularly in respect of integrative attribution reasoning (e.g., reasoning relating to dispositional and situational components). His theory is principally concerned with how a child abstracts and internalizes certain features of behaviour. Piaget posited formal operations of knowledge that necessarily arise in interaction with the world, and he referred to this as operative intelligence (Wertsch, 1979). It is concerned with the representation and manipulation of transformational aspects of reality, and it frames how the world is understood. It is the active part of intelligence that involves all actions, including anticipation, following or recovering the transformations of objects of attention. Piaget also coined the term figurative intelligence, which is the “static” part of intelligence that represents (in mind) meaning that arises from the operative aspects of intelligence. The states that intervene between transformations cannot exist independently from their interconnected transformations, and so the two are integrally interconnected.

Bandura (1999) did not show much interest in traits or their causes, and argued that they cannot tell one much about the determinants and regulative structures governing the behaviours that constitute a particular cluster. Instead, his interest was in “perceived self-efficacy²” (concerned with beliefs about one’s capabilities to produce designated levels of performance that exercise influence over events that affect life). Self-efficacy beliefs determine how people feel, think, motivate themselves and behave, where beliefs produce these diverse effects through the major processes of cognition, motivation, effectiveness and selection. So, rather than a trait theory, Bandura produced a process theory in which one can envisage that the traits condition the processes in some invisible way. In contrast, type theory refers to the variable states that may develop within a set of traits (Eysenck, 1957).

Returning to traits, MBTI is a Jungian informed *personality typology* that developed for personality profiling approaches for non-clinical populations. The typology comes from a set of 8 pair-wise interacting variables (= 4 enantiomers) that result in any of 16 given *personality patterns*, and which offers the approach to a transparent generative basis for personality. Despite doubts about its validity (McKenna et al., 2002), instruments of *personality type* have become important to many human resource environments, because they are believed to be helpful in dealing with a diversity of individuals and creating more cohesive organisational cultures.

It is possible to summarize relationships between socio-cognitive, trait, enantiomer and type tendencies in the predominant species of theories, as shown in Table 1. Support for the distinctions in Table 1 might be read into Cervone et al. (2001), who noted that a socio-cognitive approach yields a theory of *personality assessment* that differs significantly from the trait-dispositional assessment strategy that has so far predominated in the field. Table 1 also highlights the realization that the different species of theory exist across a fragmented horizon of meanings, since they rarely link. Having said this, connecting of the species of theories is not unknown, as illustrated by Eysenck (1957) who created a *trait theory* in which trait variables were able to adopt *type states*, and by Van Egeren (2009) who explored how socio-cognitive theories may be expressed in terms of *traits*.

Characteristics	Socio-cognitive	Trait	Type
Theoretical Approach	Multiple-causative cognitions	Defines a framework for personality	Usually described in terms of paired opposite states called enantiomers, though Meyers (2000) rather means meta-types.
Variables	Continuous variables that may have states	Continuous variables	Discrete variable states of a trait.
Data collection tendencies	Quantitative and qualitative inquiries	Quantitative inventories	Quantitative and qualitative inventories
Analytical tendencies	Susceptible to complex explanations	Often uses simple classification approaches	Often uses relational approaches generating complex classifications.

Table 1: Overview of Major Tendencies in Personality Theories

From MBTI to Maruyama's Mindscape Theory

MBTI is a Jungian informed personality typology that does not embrace its potential for the dynamic aspects of personality. It assumes that the cognitive mind can be manifested as personality to influence a person's behaviour in every day social life, and is designed to identify personality types through their stable preferences. It is intended to explain the (decision making) behavioural differences that result from people's consistent tendencies (resulting in their stable preferences) to use their minds in different ways. Seemingly random variation in individual behaviours is seen as orderly and consistent due to distinctions in the ways they prefer to use their perception and judgment.

The aim of MBTI is to identify the basic patterns of preferences of people in regard to perception and judgment. The effects of each preference, singly and in combination, can be established by research and put into practical use, especially in relation to decision-making behaviour. Its generative nature arises from 8 coded enantiomers paired into 4 preference dimensions, which can be combined to form a set 16 personality types. The codes are set into the four bi-polar personality functions: (1) *Social attitude*: E(extraversion) and I(introversion) indicate the individual's most favoured 'Energy Source'; (2) *Perceiving*: S(sensing) and N(intuition) indicate the individual's most favoured 'Perceiving Mental Process'; (3) *Judging*: T(thinking) and F(feeling) indicate the individual's most favoured 'Judging Mental Process'; (4) *Lifestyle*: J(judgment) and P(perception) indicate the individual's kind of mental process guiding 'Outside World Orientation'.

There is a tendency to understand each of the 16 personality types as the sum of its essential parts in stable combinations of 4 preferential states, such as ESTJ=E+S+T+J [= Extraversion + Sensing + Thinking + Judgement]. It is the interaction of the four preferences, which are important. Their interactions determine the unique mental patterns. E.g., INTJ [Introversion + Intuition + Thinking + Judgement] is taken to be the most independent minded of the 16 personality types, while ISTP is seen as in particular having an intuitive investigatory aptitude. Thus for instance the 16 personality types are listed as: ISTJ, ISFJ, INFJ, INTJ, ISTP, ISFP, INFP, INTP, ESTP, ESFP, ENFP, ENTP, ESTJ, ESFJ, ENFJ, ENTJ.

In contrast to MBTI, Maruyama developed his socio-cognitive personality type theory through a schema of epistemological *meta-types*, which he called Mindscape theory. This schema permits personal determinants to operate dynamically within causal structures. Meta-types are combinations of epistemic values (which we call enantiomers) which are constituted as elements of human culture, material objects, or human practice (Maruyama, 1988). Mindscape analysis, Maruyama claims, is

particularly suitable for complex and multifaceted environments, and can be used to explore the interrelations among seemingly unrelated aspects of human activities. While Mindscape theory is represented as an epistemological typology, its purpose and use lie in interrelating seemingly separate aspects of human activities (Maruyama, 1988, p.311). While Mindscape modes are numerous and vary from individual to individual, they cumulate into at least four common and stable types that may be partly innate and partly learned.

Social collectives have a normative collective cognitive ability (Thompson, Leigh and Gary Alan Fine, 1999), and as such they also have what we shall call a normative personality - a principle also supported by, for instance, Bridges (1992), Kets de Vries (1991) and Yolles (2006), and already implicitly embedded in Mindscape theory and MBTI. Hence, Mindscape theory can apply to social personality and individual personality contexts. Within the context of the social personality "one of the [personality] types becomes powerful for historical or political reasons, and utilizes, ignores or suppresses individuals of other types" (Maruyama, 2002, p167; cited by Boje, 2004). Following Maruyama (1988; 2001; 2008) and Boje (2004), four types of Mindscapes always exist in any culture, though their percentage distribution varies across cultures³. Available data on cross-cultural migrants indicate that some aspects of Mindscapes are formative in childhood and become irreversible at the age of around ten, approximately corresponding to the child's formative years. An agency with one Mindscape mode may "learn" to "understand" by some intellectual process a figurative structure that is conceptualized in other Mindscapes, but the results of such attempts are likely to be highly distorted or psychologically artificial. This becomes clearer, for example, when an agency is a human activity group that holds a particular paradigm in science (Kuhn, 1970).

Gammack (2002), in his discussion of Mindscape theory, noted Maruyama's rejection of the common simple-minded typologies in favour of a "relationology" that goes further than temperamental classifications of individual qualities. Rather it specifies an epistemological basis from which communicative and behavioural styles result. Cultures are seen to be epistemologically heterogeneous, and a number of canonical Mindscape modes exist that are each represented within them in some proportion. These epistemological modes are seen to be prior to, and transcendent of, nationality and culture (Maruyama, 1988; 2001). Indeed, as indicated by Maruyama (1974) these epistemological types are directly related to personality characteristics and cultural backgrounds. An epistemic description of each of these Mindscapes has been proposed by Dockens (2004) (adapted from Maruyama, 1980) as shown in Table 2. Here the epistemic categories cover, for Dockens, a typology of knowledge that constitutes the basis of the Mindscape types. The names given to each of the mindscape types while having their origin in Maruyama (1974), arise from Boje (2004).

Epistemic Categories	The Four Mindscape Types			
	<i>H</i> (<i>Hierarchical Bureaucrat</i>)	<i>I</i> (<i>Independent Prince</i>)	<i>S</i> (<i>Social Reformer</i>)	<i>G</i> (<i>Generative Revolutionary</i>)
Universal View	Casual chains. Hierarchy of categories, super-categories. "Oneness" with the universe, Processes are repeatable if conditions are the same	The most probable state is random distribution of events with independent probability. Structures decay	Equilibrium by means of mutual corrections, or cycles due to mutual balancing, Structures maintained	Generated new patterns by means of mutual interaction, Structures grow, Heterogeneity, differentiation, symbiotization and further heterogenization increase.
Information	The more specified, the more information. Past and future inferable from present probabilistically or deterministically.	Information decays and gets lost, Blueprint must contain more information than finished product. Embryo must contain more information than adult.	Loss of information can be counteracted by means of redundancy or by means of feedback devices.	Complex patterns can be generated by means of simple rules of interaction. The amount of information needed to describe the generated pattern may be greater than the amount of information to describe the rules of interaction. Thus the amount of information can increase.
Perception	Rank-ordering, classifying and categorizing into neat scheme. Find regularity.	Isolating, Each is unique and unrelated to others.	Contextual: Look for meaning in context, Look for mutual balance, seeks stability.	Contextual: Look for new interactions and new patterns, Therefore meanings change and new meanings arise.
Logic	Deductive, axiomatic. Mutually exclusive categories. Permanence of substance and identity.	Each question has its answer unrelated to others.	Simultaneous understanding of mutual relations. No sequential priority. Logical values cannot be ordered.	
Ethics	Competition, Zero-sum. If not homogeneous, then conflict. Let the "strongest" dominate homogenistically. Majority rule (dominated by quantity).	Isolationism, Zero-sum or negative-sum, Virtue of self-sufficiency.	Symbiosis: Static harmony. Avoid disturbance, Restore previous harmony.	Symbiotization: evolving harmony. Positive sum. Regard differences as beneficial. Incorporate new endogenous.

Table 2: Description of Mindscape Types (Dockens, 2004)

Mindscape types were perceived by Maruyama (1988) to be quite different from the Jungian psychological typologies. They provide a link between seemingly separate activities such as decision process, criteria of beauty, and choice of science theories. They do not line up on a single scale, nor do they fit in a two-by-two table. Rather, Maruyama considered, they are more like the four corners of a tetrahedron. Mindscape theory is not a classificational typology (like that of Myers, 2000) since its purpose and use "lie in interrelating seemingly separate aspects of human activities such as organizational structure, policy formulation, decision process, architectural design, criteria of beauty, choice of theories, cosmology, etc." (Maruyama, 1988:2). Maruyama assumed that it has a relational basis.

Maruyama's (2002, p167) argument has already been noted that a social system develops an affinity for one personality meta-type over another for historical or political reasons, and ignores or suppresses individuals of other types. This perception is in contrast to Jung (1923), Schwartz (1990) and to Tamis-LeMonda et al (2007). Maruyama settles on the 'opposing view' perception of alternate poles.

Using Mindscape theory provides a broad and potentially dynamic capacity to describe agencies, and thereby can generate explanations about situations in which they were involved, or expectations

about their potential behaviour in anticipated situations.

Creating Eight Mindset Types from the Sagiv-Schwartz Trait Basis

Following an interest in characterising societal culture, Schwartz (1999, 2004) undertook an extensive study (60,000 respondents) to explore the dimensionality of cultural orientations. It derived cultural orientations from a priori theorizing (unlike previous approaches such as: Hofstede, 1980, 2001; House, Javidan, & Dorfman, 2001; Inglehart & Baker, 2000) rather than post hoc examination of data. The measuring instrument Schwartz used a designated set of a priori value items to serve as markers for each orientation. These items were tested for cross-cultural equivalence of meaning. The items were demonstrated to cover the range of values recognized cross-culturally. In addition, it specified how the cultural orientations are organized into a coherent system of related dimensions and verified this organization, rather than assuming that orthogonal dimensions best capture cultural reality. Finally, it brought empirical evidence that the order of national cultures on each of the orientations is robust across different types of samples from many countries around the world.

Sagiv and Schwartz (2007) identified three bipolar dimensions of culture that represent alternate resolutions to each of three challenges that confront all societies. In the context of the agency, these bipolar dimensions constitute enantiomer pairs that (like Boje's (2004) conceptions where he formulated a set of Foucaultian based traits to create a Mindscape space) can be assigned to some originating trait, the names of which have been influenced by Piaget's (1950) theory of human commonalities. These traits with paired enantiomers are: cognitive (embeddedness, autonomy), figurative (hierarchy, egalitarianism) and operative (mastery, harmony). These are explained briefly in Table 3.

(1) Cognitive Trait Enantiomers

Embedded cultures are consistent with a collectivistic view, where meaning in life can be found largely through social relationships, identifying with the group, participating in a shared way of life, and the adoption of shared goals. Values like social order, respect for tradition, security, and wisdom are important. There tends to be a conservative attitude in that support is provided for the status quo and restraining actions against inclinations towards the possible disruption of in-group solidarity or the traditional order.

Autonomy cultures are consistent with an individualistic view, where meaning is found in the uniqueness of the individual that is encouraged to express internal attributes (preferences, traits, feelings, motives). Two classes of cultural autonomy arise: Intellectual and Affective Autonomy. Intellectual autonomy presumes that individuals are encouraged to pursue their own ideas and intellectual directions independently (important values: curiosity, broadmindedness, creativity), while in affective autonomy individuals are encouraged to pursue affectively positive experience for themselves. The values are: exciting life, enjoying life, varied life, pleasure, and self-indulgence. At this point it is important to note that there are notable reasons why Shalom Schwartz has kept affective autonomy separately from intellectual autonomy. Affective autonomy is also positively correlated with Mastery, and it is granting that those who achieve high efficacy through mastery also can enjoy the benefits of their efforts. These two facets of the enantiomer constitute an important element of individualism and are in contrast to harmony.

(2) Figurative Trait Enantiomers

Mastery promotes the view that active self-assertion is needed in order to master, direct, and change the natural and social environment to attain group or personal goals (values: ambition, success, daring, competence). Mastery organizations tend to be dynamic, competitive, and oriented

to achievement and success, and are likely to develop and use technology to manipulate and change the environment to achieve goals.

Harmony promotes the view that the world should be accepted as it is, with attempts to understand and appreciate rather than to change, direct, or exploit. There is an emphasis on fitting harmoniously into the environment (values: unity with nature, protecting the environment, world at peace). In harmony organisations, there is an expectation that they will fit into the surrounding social and natural world. Leaders that adopt this type try to understand the social and environmental implications of organizational actions, and seek non-exploitative ways to work toward their goals.

(3) Operative Trait Enantiomers

Hierarchy supports the ascription of roles for individuals to ensure responsible, productive behavior. Unequal distribution of power, roles, and resources are seen to be legitimate (values: social power, authority, humility, wealth). The hierarchical distribution of roles is taken for granted and to comply with the obligations and rules attached to their roles.

Egalitarianism promotes the view that people recognize one another as moral equals who share basic interests. There is an internalisation of a commitment towards cooperation, and to feelings of concern for everyone's welfare. There is an expectation that people will act for the benefit of others as a matter of choice (values: equality, social justice, responsibility, honesty).

These traits and their enantiomer characteristics are summarised in Table 3 together with a listing of keywords that are relevant to the types. Setting the cultural-level Sagiv-Schwartz enantiomers into a trait space thereby enables the generation of what we call a set of Sagiv-Schwartz Mindset Types (Table 5). As explained earlier, while they come from a similar frame of reference to that of Maruyama, their epistemology arises differently.

For the formation of Sagiv-Schwartz Mindset Types we use the Schwartz (1994) set of values and formation of value dimensions (Table 3). Using the same epistemic mapping technique as adopted by Maruyama to compare his Mindscapes with Harvey, we compared the Maruyama constructs with those derived from Sagiv and Schwartz (2007). For Sagiv-Schwartz Mindset Types, we have found better comparability with the Maruyama Mindscape types when, from the Schwartz value inventory, we closely relate 'affective autonomy' to 'mastery' and form a composite epistemic bi-polar trait (Mastery & Affective Autonomy vs. Harmony).

Traits	Dimensions/Poles	Values/Items
Cognitive	Intellectual Autonomy	[broad-mindedness, freedom, creativity, curious]
	Embeddedness	[polite, obedient, forgiving, respect tradition, self discipline, moderate, social order, family security, protect my public image, national security, honor elders, reciprocation of favors].
Figurative	Mastery & Affective Autonomy	[successful, ambitious, independent, influential, social recognition, choosing own goals, daring, capable] [exciting life, varied life, pleasure, enjoying life, self-indulgent]
	Harmony	[accept my portion in life, world at peace, protect environment, unity with nature, world of beauty]
Operative	Hierarchy	[authority, wealth, social power; humble]
	Egalitarianism	[loyal, equality, responsible, honest, social justice, helpful]

Table 3 Sagiv and Schwartz (2007) Bi-Polar Traits (modified with respect to affective autonomy).

When comparing the values and attitudes of the Maruyama Mindscape types with the Sagiv & Schwartz value dimensions in an epistemological mapping, we easily find values/items of the Schwartz universe which fit part of the respective Maruyama Mindscape types as shown below.

The *H* type contains numerous items which are similar or can be related to notions of *embeddedness and hierarchy* of the Schwartz system: hierarchical, homogenist (conventionalist), classification (neat categories), universalist, sequential, competitive, one truth, eternal, unity by similarity, ethics to dominate the weak, ingroup, self-stereotyping, group bounded, prone to collectivism.##

The *I* type contains numerous items which are similar or can be related to notions of *intellectual autonomy, affective autonomy and mastery* of the Schwartz system: independent, heterogenistic, unconventionalist, individualistic, uniqueness, separation, caprice, subjectivity, isolationist, temporary, no order, identity, specialization, indifference, poverty self-inflicted, prone to individualism.

As a reflection of the ‘*mutualists Mindscape types*’ mentioned previously and arising from Maruyama (1974), we find similarities to the notions *egalitarianism and harmony* of the Schwartz system: heterogenistic, interactive, mutualizing, relating, simultaneous, positive-sum, poly-ocularly, absorption, contextual, non-hierarchical. The consequent differentiation between the *G* type and the *S* type apparently is influenced by a slightly stronger orientation towards *intellectual autonomy* of the *G* type and towards *embeddedness* of the *S* type. Considering the Schwartz value universe (Figure 1) which was produced with the Co-Plot⁴ technique of Raveh (2000), we find that Maruyama intuitively discovered that neighbouring ‘value fields’, i.e. combinations of positively correlated values, form the basis of emergent behavioural types. In terms of the Schwartz value universe: ‘*hierarchists*’ have a preference for hierarchy and embeddedness, ‘*individualists*’ have a preference for autonomy and mastery, and ‘*mutualists*’ have a preference for egalitarianism and harmony.

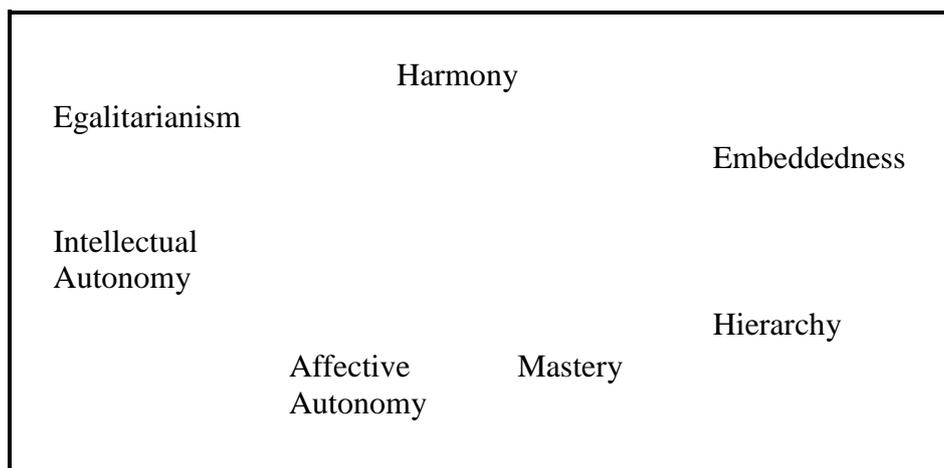


Figure 1: Schwartz’s Value Universe (Schwartz, 2008)

Now, we can note that the route suggested by Boje (2004) can be further pursued with a more differentiated system of 8 types derived from Sagiv-Schwartz (2007) traits. To do this we initially formulate a labelling code as shown in Table 4. These arise from epistemic cross-comparison

deriving from the traits poles (the enantiomers), and permit choices to be made for labels from the options available.

Label	Origin in Sagiv & Schwartz (2007)
Individualism	Intellectual Autonomy, Mastery & Affective Autonomy
Synergism	Intellectual Autonomy and Harmony
Populism	Embeddedness, Mastery & Affective Autonomy
Collectivism	Embeddedness and Harmony
Hierarchical	Hierarchy
Egalitarian	Egalitarianism
Collectivist	Harmony and Embeddedness
Hierarchist (Mindscape)	Embeddedness and Hierarchy
Independent Prince (Mindscape)	Intellectual Autonomy, Mastery & Affective Autonomy
Mutualist (Mindscape)	Egalitarianism and Harmony
Achievement Hierarchist (Mindscape)	Hierarchy, Mastery & Affective Autonomy
Generativist (Mindscape)	Intellectual Autonomy and Egalitarianism

Table 4: Generative origin of the Labels used in Mindset Theory

As a result we can formulate the Mindset types against the enantiomers and their epistemic values as shown in Table 5. The type numbers do not imply trait importance, but simply are counting the number of types.

Mindset Type	Enantiomer	Epistemic Value
1: HI Hierarchical Individualism	Intellectual Autonomy	[broad-mindedness, freedom, creativity, curious]
	Mastery & Affective Autonomy	[successful, ambitious, independent, influential, social recognition, choosing own goals, daring]
	Hierarchy	[exciting life, varied life, pleasure, enjoying life, self-indulgent]
		[authority, wealth, social power]
2: EI Egalitarian Individualism <i>Maruyama: I (Independent Prince)</i>	Intellectual Autonomy	[broad-mindedness, freedom, creativity, curious]
	Mastery & Affective Autonomy	[successful, ambitious, independent, influential, social recognition, choosing own goals, daring]
	Egalitarianism	[exciting life, varied life, pleasure, enjoying life, self-indulgent]
		[loyal, equality, responsible, honest, social justice, helpful]
3: HS Hierarchical Synergism	Intellectual Autonomy	[broad-mindedness, freedom, creativity, curious]
	Harmony	[accept my portion in life, world at peace, protect environment, unity with nature, world of beauty]
	Hierarchy	[authority, wealth, social power]
4: ES Egalitarian Synergism <i>Maruyama: G (Generative Revolutionary)</i>	Intellectual Autonomy	[broad-mindedness, freedom, creativity, curious]
	Harmony	[accept my portion in life, world at peace, protect environment, unity with nature, world of beauty]
	Egalitarianism	[loyal, equality, responsible, honest, social justice, helpful]
5: HP Hierarchical Populism <i>Maruyama: H (Hierarchical Bureaucrat)</i>	Embeddedness	[polite, obedient, forgiving, respect tradition, self-discipline, moderate, social order, family security, protect my public image, national security, honour elders, reciprocation of favours]
	Mastery & Affective Autonomy	[successful, ambitious, independent, influential, social recognition, choosing own goals, daring]
		[exciting life, varied life, pleasure, enjoying life, self-indulgent]
	Hierarchy	[authority, wealth, social power]
6: EP Egalitarian Populism	Embeddedness	[polite, obedient, forgiving, respect tradition, self-discipline, moderate, social order, family security, protect my public image, national security, honour elders, reciprocation of favours].
	Mastery & Affective Autonomy	[successful, ambitious, independent, influential, social recognition, choosing own goals, daring]
		[exciting life, varied life, pleasure, enjoying life, self-indulgent]
	Egalitarianism	[loyal, equality, responsible, honest, social justice, helpful]
7: HC Hierarchical Collectivism	Embeddedness	[polite, obedient, forgiving, respect tradition, self-discipline, moderate, social order, family security, protect my public image, national security, honour elders, reciprocation of favours].
	Harmony	[accept my portion in life, world at peace, protect environment, unity with nature, world of beauty]
	Hierarchy	[authority, wealth, social power]
8: EC Egalitarian Collectivism <i>Maruyama: S (Social Reformer)</i>	Embeddedness	[polite, obedient, forgiving, respect tradition, self-discipline, moderate, social order, family security, protect my public image, national security, honour elders, reciprocation of favours].
	Harmony	[accept my portion in life, world at peace, protect environment, unity with nature, world of beauty]
	Egalitarianism	[loyal, equality, responsible, honest, social justice, helpful, cooperation]

Table 5: Mindset Types derived from Sagiv and Schwartz (2007) Bi-Polar Traits

For further analysis beyond contrasting Mindset types, where all three alternate enantiomer poles are different, we may also take a look at variation, where two enantiomers are the same and only one is varied. In the Sagiv-Schwartz value universe six options arise, which are presented in Table 7. We begin with Harmony and move clockwise around the Schwartz value universe (Figure 1). We present variations, where two central pairs of constructs are kept constant. In the Sagiv-Schwartz universe these pairs are located next to each other, because these constructs are correlated to each other.

Attitude Mindset Type (Pole 1)	Enantiomer	Attitude Mindset Type (Pole 2)	Enantiomer
Collectivist: Harmony and Embeddedness			
7: HC (Hierarchical Collectivism)	<i>Embeddedness</i> <i>Harmony</i> <i>Hierarchy</i>	8: EC (Egalitarian Collectivism)	<i>Embeddedness</i> <i>Harmony</i> <i>Egalitarianism</i>
Hierarchist (Mindscape): Embeddedness and Hierarchy			
5: HP (Hierarchical Populism)	<i>Embeddedness</i> <i>Mastery & Affective</i> <i>Autonomy</i>	7: HC (Hierarchical Collectivism)	<i>Embeddedness</i> <i>Harmony</i> <i>Hierarchy</i>
<i>Mindscape: H</i>	<i>Hierarchy</i>		
Individualist: Intellectual Autonomy, Mastery & Affective Autonomy			
1: HI (Hierarchical Individualism)	<i>Intellectual Autonomy</i> <i>Mastery & Affective</i> <i>Autonomy</i> <i>Hierarchy</i>	2: EI (Egalitarian Individualism)	<i>Intellectual</i> <i>Autonomy</i> <i>Mastery &</i> <i>Affective</i> <i>Autonomy</i> <i>Egalitarianism</i>
Mutualist (Mindscape): Egalitarianism and Harmony			
8: EC (Egalitarian Collectivism)	<i>Embeddedness</i> <i>Harmony</i> <i>Egalitarianism</i>	4: ES (Egalitarian Synergism)	<i>Intellectual</i> <i>Autonomy</i> <i>Harmony</i> <i>Egalitarianism</i>
<i>Mindscape: S</i>		<i>Mindscape: G</i>	
Achievment Hierarchist: Hierarchy, Mastery and Affective Autonomy			
1: HI (Hierarchical Individualism)	<i>Intellectual Autonomy</i> <i>Mastery & Affective</i> <i>Autonomy</i> <i>Hierarchy</i>	5: HP (Hierarchical Populism)	<i>Embeddedness</i> <i>Mastery &</i> <i>Intellectual</i> <i>Autonomy</i> <i>Hierarchy</i>
		<i>Mindscape: H</i>	
Generativist: Intellectual Autonomy and Egalitarianism			
2: EI (Egalitarian Individualism)	<i>Intellectual Autonomy</i> <i>Mastery & Affective</i> <i>Autonomy</i> <i>Egalitarianism</i>	4: ES (Egalitarian Synergism)	<i>Intellectual</i> <i>Autonomy</i> <i>Harmony</i> <i>Egalitarianism</i>
		<i>Mindscape: G</i>	

Table 7: Mindset Variations of the Four Maruyama's Mindscapes

Now, one remaining open issue is whether the number of types is appropriate to characterize variety within and between social systems? Apparently, any number of types could be created from any number of traits. Once, in an interview Geert Hofstede said to one of the authors: “Values - you can have as many as you want. The issue is, whether you have a sufficiently large number, for differentiation, and a sufficiently small number to be remembered by the audience.” The number of traits quickly increases when several states of a trait are considered to be type forming. In Figure 2 we illustrate 8 types which emerge from the alternate poles of 3 traits: $8=2^3$. In a case where three

states of a trait (e.g. the extremes and a range in the middle) constitute a system, then $z=3^n$. E.g. one could assume that the upper and lower third of a trait represent the two poles of a trait, and the middle third represents a balanced attitude. In that case we would end up with 27 possible types: $27=3^3$.

Conclusion

In this paper, with Mindset Agency Theory we have created eight contrasting mind-set types, which are indicative of major differentiations of values and attitudes within any social system, be it society or organisation. For a field of practical application we may emphasize that Mindset Personality Types are associated with distinct ideologies. Since politics at large are interconnected with social and economic policies, it is for instance of political interest to relate the political positions of major political parties or major political streams of thought to Mindset Types which reveal basic attitudes and values. Such an exercise may help to systematically identify likely political options (e.g. for political coalitions but also for oppositional attitudes) and hence to anticipate likely emerging economic and social policies, but also indicate perspectives of policy blocking.

Before creating Mindset Agency Theory we referred to personality modelling approaches which were broadly described as classificational, relational or dynamic/causal. Jung's, Bandura's and Piaget's theories are all causal; MBTI and FFM are classificational; and Maruyama's Mindscape theory is relational. Because of its epistemological and relational basis, we found that Maruyama's Mindscape theory has a better potential capacity to explore cognitive patterns of personality than MBTI and FFM. However, Maruyama's Mindscape theory does not have the generative transparency of MBTI. To improve on the generative transparency of Mindscape theory, Boje's had introduced three "real traits". However, Boje's approach remained qualitative without the immediate possibility of empirical support, and is thereby not improving the potential for broader use of Mindscape theory.

Closer inspection revealed that Shalom Schwartz's theoretical and empirical work on cultural values can be feasibly used to transparently generate eight Sagiv-Schwartz Mindset Types from the three paired enantiomers of the set of personality traits/value dimensions. Four of the eight Sagiv-Schwartz Mindset types broadly cover the four Maruyama Mindscapes. With the other four types we are reaching beyond Maruyama Mindscape types, completing the three dimensional *trait* space on the wish list of Boje.

As a limitation of this paper we have to concede that in depth empirical research still has to be undertaken for full integration of Maruyama's approach with Schwartz's approach, i.e. a combination of the Schwartz questionnaire, available from Shalom Schwartz, with the Maruyama/Boje questionnaire (Boje, 2004), and applying them simultaneously to the same sample and to analyse the received quantitative data with appropriate techniques.

Further theoretical work is possible from the Mindset basis that we have created, which seeks to develop a dynamic "living system" model of personality. Its control processes may operate through Sagiv-Schwartz traits that couple together and by this should provide a theoretical foundation of the Sagiv-Schwartz Mindset types. From this model, we would expect that patterns of behaviour in relation to attitudes in politics and management can be anticipated. This theory of Mindset types should have the potential of playing a dynamic role within a theory of normative personality (unlike that of classificational approaches like MBTI), embracing, for instance, cognitive learning concepts of both Bandura and Piaget. This work, while having some relevance to the individual agency, will be more directed towards the collective agencies. A meta-model of normative personality could provide an appropriate theory from which the number and contents of traits can be derived. This

meta-theory may move Mindset Theory from a relational constellation to a causative one, thus enabling the dynamic nature of personality to be explored as discussed by Piaget and by Bandura. This will require setting the personality with its three characterising traits into a theory of agency, embedding a normative personality into a cultural and social environment, and characterising the relations with these environments with two additional traits.

References

- Allport, G.W. (1961). *Pattern and Growth in Personality*. New York: Holt, Rinehart & Winston.
- Argote, L., Todorova, G., 2007, Organisational Learning: Review and Future Directions, *International Review of Industrial and Organisational Psychology*, 2007; 193-234.
- Argyris, C., Schön, D. (1978). *Organisational Learning: A Theory of Action Perspective*. Addison-Wesley, Reading, MA.
- Atkinson, R.C., Shiffrin, R.M. (1968). Human Memory: A proposed system and its control processes. In K.W. Spence & J.T. Spence (Eds.), *The psychology of learning and motivation: Vol. 2, Advances in research and theory* (pp.90-196) Academic Press, New York.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. NJ.: Prentice-Hall Englewood Cliffs.
- Bandura, A. (1991a). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behaviour and development*, (Vol. 1, pp. 45-103), NJ: Erlbaum, Hillsdale.
- Bandura, A. (1999). A social cognitive theory of personality, in Pervin, L., John, O. (Eds.), *Handbook of personality* (2nd ed., pp. 154-196), Guilford Publications, New York.: (Reprinted in D. Cervone & Y. Shoda (Eds.), *The coherence of personality*, Guilford Press, New York.
- Bandura, A., (1999a). Moral disengagement in the perpetration of inhumanities, *Personality & Social Psychology Review* 3 (3): 193–209.
- Bandura, A., (2006). Toward a psychology of human agency, *Association for Psychological Science*, 1(2)164-80.
- Bandura, A. (2008). The reconstruction of "free will" from the agentic perspective of socialcognitive theory. In J. Baer, J. C. Kaufman & R. R Baumeister (Eds.), *Are We Free? Psychology and Free Will*. (pp. 86-127). Oxford: Oxford University Press,
- Baron, J. (1982), Intelligence and Personality. In R. Sternberg (Ed.). *Handbook of Intelligence*. Cambridge: Cambridge University Press.
- Blanchard-Fields, F., and Norris, L. (1994). Causal attributions from adolescence through adulthood: Age differences, ego level, and generalized response style. *Aging Neuropsychology and Cognition*, 1, 67-86.
- Boje, D. (2004). *Welcome to Mindscapes*. Retrieved from: <http://peaceaware.com/Mindscape/>, accessed December 2007.
- Bowlby, J., (1980). *Attachment and Loss: sadness and depression*, Basic Books, New York.
- Bridges, W. (1992). *The Character of Organizations: Using Jungian Type in Organizational Development*, Consulting Psychologists Press, Palo Alto, CA.
- Carver, C. S., Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Cattell, R. B. (1945). The description of personality: Principles and findings in a factor analysis. *American Journal of Psychology*, 58, 59-90.
- Cervone, D., Shadel, W.G., Jencius, S. (2001). Social-Cognitive Theory of Personality Assessment. *Personality and Social Psychology Review*, 5(1) 33–51
- Cervone, D., Mor, N., Orom, H., Shadel, W. G., Scott, W. D. (2004). Self-efficacy beliefs and the architecture of personality. In Baumeister, R.F., Vohs, K. D. (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 188–210), Guilford Press, New York

- Cody, T. J. (1996). *Use of the Myers-Briggs Type Indicator to predict persisters and dropouts at a small liberal arts college*. Unpublished doctoral dissertation, Southern Illinois University, Carbondale
- Costa, P.T., & McCrae, R.R. (1992). *NEO PI-R. Professional manual*, FL: Psychological Assessment Resources, Inc., Odessa.
- de Oliveira, A.C.M, Croson, R.T.A., Eckel, C. (2008). *Are Preferences Stable Across Domains? An Experimental Investigation of Social Preferences in the Field*, *Center for Behavioural and Experimental Economic Science*. (CBEEES) Working Paper #2008-3. www.aeaweb.org/annual_mtg_papers/2009/retrieve.php?
- Dockens, W.S. III (2004), "The Shanghai mirror: the mathematical psychology of integration, Mindscales and synchronicity-2", *Proceedings of the 48th Annual Conference of International Society for the Systems Sciences*, Pacific Grove, CA.
- Eysenck, H.J. (1957). *Sense and Nonsense in Psychology*. Penguin Books Ltd, Harmondsworth, Middlesex, UK.
- Gammack, J. (2002). Mindscales And Internet-mediated Communication, *J. Computer Mediated Communicatons*, 7 (3), <http://jcmc.indiana.edu/vol7/issue3/gammack.html>
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Good, T. L., Brophy, J. E., (1990). *Educational psychology: A realistic approach*. (4th ed.), Longman, White Plains, NY.
- Gottfredson, M.R., Hirschi, T. (1990). *A General Theory of Crime*. Stanford, CA: Stanford University Press.
- Heinström, J. (2003). Five personality dimensions and their influence on information behaviour. *Information Research*, 9(1) October, Retrieved from: <http://informationr.net/ir/9-1/paper165.html>.
- Hofstede, G. (1980). *Culture's Consequences – International Differences in Work-Related Values*. Sage Publications, Newbury Park.
- Hofstede, G. (2001). *Culture's Consequences: Comparing Values, behaviours, institutions, and organizations across nations*. Sage Publications.
- House R., Javidan, M, Hanges, P. and Dorfman P. (2002) Understanding cultures and implicit leadership theories across the globe: an introduction to Project GLOBE. *Journal of World Business* 37,1,3,
- Hyldegård, J. (2009). Personality traits and group-based information behaviour: an exploratory study. *Information Research*, 14(2) paper 402, Retrieved from: <http://InformationR.net/ir/14-2/paper402.html>
- Inglehart, R., Baker, W.E. (2000). Modernization, cultural change, and the persistence of traditional values, *American Sociological Review*, 61(1)19–51.
- Jung, C. (1923). *Psychological types*, New York: Harcourt Brace.
- Kets de Vries, M.F.R., 1991, *Organisations on the Couch: Clinical Perspectives on Organisational Behaviour and Change*, Jossey-Bass Inc (a Wiley publication), NY, USA.
- Krupat, E. (2006). Context Matters, But Let's Not Go Too Far, *Journal of General Internal Medicine* (2006) October; 21(10): 1129–1130. Retrieved from: www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1831619
- Kuhn, S.T. (1970). *The Structure of Scientific Revolutions*. University of Chicago Press, Chicago
- Labouvie-Vief, G. (1992). A Neo-Piagetian perspective on adult cognitive development. In R.J. Sternberg and C.A. Berg (Eds.), *Cognitive Development* (pp. 197-228). Cambridge University Press, New York, NY.
- Langford, P. H., Reynolds, N. J., & Kehoe, J. E. (2009). Conference Proceedings of the 8th Industrial and Organisational Psychology Conference. Australian Psychological Society, Melbourne.

- Maruyama, M. (1974). Hierarchists, Individualists, and Mutualists: Three paradigms among planners. *Futures* 6:103-13.
- Maruyama, M. (1980). Mindscapes and science theories. *Current Anthropology* 21: 589-599.
- Maruyama, M. (1988). Dynamics among Business Practice, Aesthetics, Science, Politics and Religion. *Cultural Dynamics* 1988; 1; 309-335.
<http://cdy.sagepub.com/cgi/content/abstract/1/3/309>
- Maruyama M. (2001). Individual Types: Subcultural or Transcultural. *The General Psychologist*. Vol. 36 (3): 64-67.
- Maruyama M. (2002). Individual heterogeneity, human resources and management policy. *Metamorphosis*, Vol. 1 (2): 155-183.
- Maruyama, M. (2008). Individual cognitive types and their implication in human resources management. *Indian Journal of Management Technology*, Vol. 1, No. 2, September-February 2008, 79-94.
- McAdams, D. P. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry*, 7, 295–321.
- McAdams, D.P. (2001). The Psychology of Life Stories, *Review of General Psychology*, Vol. 5, No. 2, 100-122
- McKenna, M.K., Shelton, C.D., Darling, J.R. (2002) The impact of behavioural style assessment on organizational effectiveness: a call for action, *Leadership & Organization Development Journal*. 23(6)314-322
- Miller, N. E., Dollard, J. (1941). *Social Learning and Imitation*. Yale University Press, New Haven.
- Miller, G.A., Galanter, E., & Pribram, K.H., 1960, *Plans and the Structure of Behavior*, New York: Holt, Rinehart & Winston.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley
- Mroczek, T.K., Little, T.D. (2006). Handbook on Personality Development, Mahwah, NJ: *Lawrence Erlbaum Associates*
- Müller, H.J., Malsch, T.H., Schulz-Schaeffer, I. (1998). Socionics: Introduction and Potential, *Journal of Artificial Societies and Social Simulation*, 1 (3), Retrieved from: www.soc.surrey.ac.uk/JASSS/1/3/5.html, 2006.
- Myers, I.B. (2000). *An Introduction to Types: A Guide to Understanding Your Results on the Myers-Briggs Types Indicator*. CPP, Palo Alto, CA, Revised from the 1998 edition.
- Myers, I.B., McCaulley, M.H., Quenk, N.L. and Hammer, A.L. (1998). *A Guide to the Development and Use of the Myers-Briggs Type Indicator*, 3rd ed., Consulting Psychologist Press, Palo Alto, CA.
- Myers, I.B. & McCaulley, M.H. (1985). *MBTI Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Nobre, F.S. (2003). Perspectives on Organisational Systems: Towards a Unified Theory. *Doctoral Consortium on Cognitive Science at the ICCM 2003*. Bamberg-Germany, April.
- Novak, J. G., 1993 (March), How do we learn our lesson? *The Science Teacher*, 60, 50-55.
- Piaget, J. (1950). *The Psychology of Intelligence*, Harcourt and Brace, New York; Republished in 1972 by Totowa, NJ: Littlefield Adams.
- Raveh, Adi (2000). Co-plot: A graphic display method for geometrical representations of MCDM, *European Journal of Operational Research*, Volume 125, Issue 3, 16 September 2000, Pages 670-678, ISSN 0377-2217, 10.1016/S0377-2217(99)00276-3.
<http://www.sciencedirect.com/science/article/pii/S0377221799002763>
- Sagiv, L. and Schwartz, S.H. (2007). Cultural values in organisations: insights for Europe, *European J. International Management*, 1(3)167,190
- Schwartz, S.H. (1990). Individualism-Collectivism. Critique and Proposed Refinements. *Journal of Cross-Cultural Psychology*, June 1990 vol. 21 no. 2 139-157.
- Schwartz, S.H. (1994). Beyond individualism/collectivism: New dimensions of values. In: U. Kim,

- H.C. Triandis, C. Kagitcibasi, S.C. Choi and G. Yoon, (eds.), *Individualism and Collectivism: Theory Application and Methods*. Newbury Park, CA: Sage
- Schwartz, S.H. (1999). Cultural Value Differences: Some Implications for Work. *Applied Psychology: An International Review*, Vol. 48, pp.23–47.
- Schwartz, S. H. (2008). *Cultural value orientations: Nature and implications of national differences*. Moscow: State University—Higher School of Economics Press.
- Schwartz, S.H. (2004). Mapping and interpreting cultural differences around the world, contained in Vinken, H. Soeters, J. and Ester, P. (Eds.): *Comparing Cultures, Dimensions of Culture in a Comparative Perspective*, Brill, Leiden, The Netherlands, pp.43–73.
- Scott Murray, T., Clermont, Y., Binkley, M. (2005). *Measuring Adult Literacy and Life Skills: New Frameworks for Assessment*, International Adult Literacy Survey by Candian Ministry of Industry, Catalogue no. 89-552-MIE, no. 13, <http://dsp-psd.pwgsc.gc.ca/Collection/CS89-552-13E.pdf>
- Sellars, W. (1963). Imperatives, Intentions, and the Logic of 'Ought'. In Castañeda, H.N. and Nakhnikian, G. (eds.) *Morality and the Language of Conduct*. Detroit: Wayne State University Press.
- Sharpley, D. (2006). Key steps contributing to employee engagement & high performance, *Annual conference of the British Psychological Society*, Glasgow. Also see: Finding the Star Performers: An alternative to trait-based explanations of work behaviour, at <http://space.businessballs.com/wilkobilko/resources/Prism%20for%20Star%20Performers.doc>, accessed August 2008.
- Tamis-LeMonda, C.S., Yoshikawa, H., Niwa, K., Niwa, E.Y. (2007). Parents' Goals for Children: The Dynamic Coexistence of Individualism and Collectivism in Cultures and Individuals, *Social Development*, 17(1)183-209.
- Thompson, L., & Fine, G. A. (1999). Socially shared cognition, affect, and behavior: A review and integration. *Personality and Social Psychology Review*, 3, 278–302
- Tomkins, S. S. (1979). Script theory, in Howe Jr., H.E., Dienstbier, R.A. (Eds.), *Nebraska Symposium on Motivation* (Vol. 26, pp. 201-236), University of Nebraska Press, Lincoln.
- Van Egeren, L.F. (2009). A Cybernetic Model of Global Personality Traits, *Personal Social Psychology Review*, 13(2)92-108.
- Vygotsky, L.S. (1978). *Mind in Society: The development of higher psychological processes*. Harvard University Press, Harvard.
- Wang, A. (2007). *The Effects of Varied Instructional Aids and Field Dependence-Independence on Learners' Structural Knowledge in a Hypermedia Environment*, Doctoral Thesis presented to Department of Educational Studies, College of Education of Ohio University, USA.
- Wertsch, J.V. (1979). The Concept of Activity in Soviet Psychology: An Introduction. In Wertsch, J.V. (Ed), *The Concept of Activity in Soviet Psychology*, pp3-36, E.M.Sharp, New York.
- Williams, S. L. (1992) Perceived self-efficacy and phobic disability. In R. Schwarzer (Ed.), *Self-efficacy. Thought control of action* (pp. 149-176). Washington, D.C.: Hemisphere. Wilson, E. O. (1998). *Consilience. The unity of knowledge*. New York: Knopf.
- Yolles, M.I. (2006). *Organizations as Complex Systems: an introduction to knowledge cybernetics*, Information Age Publishing, Inc., Greenwich, CT.
- Yolles, M.I. (2009). A Social Psychological basis of Corruption and Sociopathology, *J. of Organizational Change Management*, 22(6) 691-731.
- Yolles, M., Fink, G., Dauber, D. (2011). Organisations as emergent normative personalities: part 1, the concepts, *Kybernetes* (5/6), 635 – 669

10. Notes

¹ FFM uses factor analysis to identify the five factors neuroticism, extraversion, openness, agreeableness and conscientiousness (Goldberg, 1993), which appears to be a development of Eysenck's (1957) original approach to explore political mindedness.

² Jung originally referred to the personality functions as enantiodynamia, a difficult word that he eventually appears to have abandoned. He used the term to explain his notions of consciousness (the process by which something becomes its opposite, and the subsequent interaction of the two), the word often implying a dynamic process. Instead we use the simpler word enantiomer, which is used to indicate complementary polar opposite epistemic values of a trait.

³ Boje (2004) also showed that MBTI could be grouped into four Mindscape modes, in principle showing that there is broad equivalence between the groups MBTI types and Mindscape modes.

⁴ The Co-Plot Software was developed by David Talby and can be found at www.davidtalby.com/vcplot/setup.exe, accessed April, 2013.