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Personality, pathology and mindsets: part 1 – agency, personality and mindscapes

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Abstract

Purpose – This paper aims to develop a new socio-cognitive theory of the normative personality of a plural agency like, for instance, an organisation or a political system. This cybernetic agency theory is connected to Bandura's theory of psychosocial function. The agency is adaptive and has a normative personality that operates through three formative personality traits, the function of which is control. The cybernetic agency theory is presented as a meta-model, which comes from cybernetic "living systems" theory.

Design/methodology/approach – First, in this paper, the authors discuss the virtues of a normative cybernetic agency model in the light of issues related to normal states and pathologies of systems. Formative traits could be derived from Maruyama's mindscape theory or Harvey's typology. However, Boje has noted that with four mindscape types Maruyama's typology is constrained. Consequently, he projected the Maruyama mindscapes into a space with the three Foucault-dimensions: knowledge, ethics and power.

Findings – The suggested cybernetic agency model with the three formative personality traits can provide a framing for a structural model that has the potential to distinguish between normal and abnormal personalities in the same framework.

Research limitations/implications – The constraints of the Maruyama mindscape space, as identified by Boje, are suggesting that further research is needed to identify a formative three-trait-system which is theory based, was empirically applied, and is permitting to create a typology with eight extreme types, yet to be identified.

Originality/value – The paper draws on earlier work undertaken in the last few years by the same authors, who in a new way are pursuing new directions and extensions of that earlier research.

Keywords Typology, Agency, Living systems, Maruyama mindscapes, Normative processes, Pathologies

Paper type Conceptual paper

Introduction

Our interest in this paper lies in coherent adaptable agencies having personalities that drive their behaviour, and the nature and consequences of the pathologies that they experience. These agencies may be individuals or social collectives, the distinction between them being that the latter operates through normative attributes that are created by the social collective of individuals, and are self-regulated and cohesive through their adhesion to the norms of a given culture. Yolles (2009) has examined the social collective in terms of its "collective mind", thereby relating more closely psychology and social psychology. As such he has explored the social collective in relation to its ability to behave as a singular cognitive entity, and just like an individual person has collective

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social psychological conditions that are equivalent to, but will have additional mechanisms from, the psychology of individuals. Both are agents of behaviour with cognitive processes, the former being composed of a collection of individuals that operates as a coherent unit through norms, and the latter a unitary person.

Having related the individual with the social, our focus centres on more complex but more or less transparent plural agencies, i.e. social collectives (e.g. organisations and nations). They are durable and develop behaviour by virtue of their cognitive and existential attributes. In such an agency individuals and their empirical psychology create collective cognitive and existential processes, and as such there is a broad relationship between the social psychology of collectives and the psychology of the individual. Agencies also can respond to their environments and adapt, and are able to survive despite the fact they are likely to have pathologies that impact on their operative capabilities. Agency pathologies are conditions of organisational ill-health that:

- may be constituted as faults in the interconnection between the parts of the organisation;
- are inhibiters of organisational coherence; and
- can prevent the parts from autonomously regulating their collective existence.

They limit an agency from operating in a way that enables it to:

- be effective;
- implement its wants and needs; and
- behave effectively.

Pathology can create lacks in an ability to perform properly through poor: (α) management; (β) procedures; (γ) communications; and (δ) the development of aspirations and motivation. Pathologies can more easily arise in an authoritarian management style in which there is:

- a high degree of central control;
- little communication;
- single voice (mono-vocal) top-down management;
- limited scope for individual initiative with an orientation towards obedience and the provision of orders;
- centralised decision-making process that tend to be repetitive;
- reluctance to start innovative processes;
- high degrees of conformity; and
- high level of resistance to change.

Pathologies occur when individuals and groups in a social agency are prevented from autonomously regulating their collective existence in a way that opposes their capacity to operate successfully and adapt. The pathologies may be considered to cause varying degrees of dysfunction, the degree determining the intensity or density of the pathologies being experienced. Such dysfunctions affect not only and agency's orientation, but the way in which it operates as a whole. So pathology can be important in the provision of an understanding of why particular types of behaviour are manifested,

and how they may be dealt with where they represent important degrees of ill-health or unfitness or dysfunction. Following Yolles (2009), two orientations of pathology can be identified: internal directed or endogenous and externally directed or exogenous. Endogenous pathologies can cause social abnormalities like neuroses and dysfunctions (Kets de Vries, 1991) that can interfere with the way the agency performs its tasks, while exogenous pathologies, i.e. those directed towards the environment, can result in sociopathic behaviour. Having appropriate agency models can improve our ability to understand the nature of the social psychology and can provide an entry into how its pathologies may be "treated". One of our interests in this paper is therefore to develop a modelling approach for the collective agency that can lead to explanations of how the pathologies of an organisation can be harmful not only to the collective itself, but also potentially to the social environments in which they exist.

Normative personalities are seen to be social psychological entities. They are embedded within an agency that can be connected with an intensity or density of pathologies. Ordered personalities have a low density of pathologies, and very disordered personalities have a high density, the latter traditionally being seen as the result of an unbalanced personality (Sane, 2012). Janowsky *et al.* (1998) have studied individuals with personality disorders – that is, personalities with a relatively high density of pathologies. They have used at least two approaches to model these. They adopted the atheoretic pathology oriented Minnesota multiphasic personality inventory (MMPI) to identify psychopathology and personality structure, an approach according to Eisenman (2006) that is inadequate for use with "normal" people since it is designed to highlight pathologies and personality disorder. Janowsky *et al.* (2002) also used the Myers-Briggs type indicator (MBTI) (Myers Briggs, 2000), normally referred to as MBTI, to profile the personalities of in-patient alcoholics/substance-use disorder patients in two classes: those with a concurrent affective disorder diagnosis as well as those not so diagnosed. They found that there were correlations between some disorders and the type classes used in MBTI to distinguish individual differences in personalities of introversion, sensing and feeling preference. This suggests that it might be possible, given appropriate theory, to associate different personalities with pathology densities, a proposition that we are theoretically interested in here. In line with this interest, Markon *et al.* (2005) note that there is increasing evidence that normal and abnormal personality can be treated within a single structural framework, and according to O'Connor and Dyce (2001) that abnormal personality can be modelled as extremes of normal personality variation. For Markon *et al.* (2005) a proposed framework has remained elusive, and instead they discuss personality disorder in terms of a hierarchical trait structure which they relate to the personality taxonomy of the Big Five (Schroeder *et al.*, 1992; John and Srivastava, 1991). The situation is even worse than this according to Mayer (2005), who argues that current theory in personality promotes a fragmented view of the person, seen through such competing theories as the psychodynamic, trait, and humanistic. As an alternative, he promotes a systems framework for personality that centres on its identification, its parts, its organization, and its development. As such, Mayer (2005) may be considered to lay the foundations for the systemic approach adopted here.

In the same way that there is a need for a single structural framework for the personality of the individual, the social collective also has a need for one, and due to the relationship between them they would be expected to be broadly similar. So, in this

paper our primary interest lies in modelling pathology densities of social agencies having normative personalities. To do this we shall take the following steps. We shall adopt a cybernetic agency model that is reflective of Bandura's (2006) ideas on the adaptive agency, and which arises from "living system" theory (Yolles, 2006). That personality can be represented as a system is not new (Pervin, 1990), but representing it as a living system is. Such an approach can respond to the needs of complexity and uncertainty, and embed features of adaptation and autonomous self-control. In the modelling approach that we shall take, personality controls derive from formative traits. It is a cybernetic personality theory which has a frame of reference that related to Maruyama's mindscape theory, which unlike the classificational MBTI, is relational in nature (Maruyama, 2001). The relationship between classificational and relational within the context of personality has been considered by various authors (Baldwin, 1992; Mayer, 1995). For Baldwin (1992), relational schemas can be usefully used to explore cognitive structures and their regularities in patterns of interpersonal relatedness. For Mayer (1995), the power of relational approaches is partly exhibited through their ability to pose questions otherwise inaccessible through classificational approaches with respect to the development of personality and the connections between its components. Living system modelling approaches allow not only the classification of systems through their traits, but also the ability to make investigations through system dynamics by investigating the importance assigned to feed-forward and feed-back processes and the relations (and correlations) between processes. Myer also notes that relational approaches offers a meaning-structure for thinking about personality and its components, and that they also offer the possibility of the synthesis of a century's work on personality components into a single representation of personality that is both multifaceted and whole.

While mindscape theory is essentially superior to classificational approaches, in Maruyama's mindscape theory the development of personality types is even less transparent than are the types of MBTI. Nor do pathologies play a part in mindscape theory, a particular interest in this paper. Since both transparency and pathology will be requirements for an understanding of normative personality, we shall propose a new formative trait basis for mindscape theory. This will come from a study by Sagiv and Schwartz (2007) capable of explaining social agency behaviour, and which will result in a class of Sagiv-Schwartz mindscape theory that will be called mindset theory. We shall then in brief explore the spectrum of pathology densities, relating them to social contexts, and differentiating, for instance, between ethical and sociopathic organisations.

This approach allows us to redefine the "mindscape concept" in slightly different broader terms than adopted by Maruyama. Adopting the idea of epistemological structures, Maruyama's theory of mindscapes is cognitive in that it refers to the way in which people interpret and process information. Mindscapes exist as a set of distinct epistemological orthogonal typologies, and which can be constituted through a set of culturally connected dimensions that include cognitive uncorrelated bi-polar traits. Such a typology can be theoretically founded in a different way from that developed by Maruyama, by adopting bi-polar traits that can be derived from a coherent "living system" meta-model of a social agency having a "personality system". We integrate empirical constructs from social psychology and social values research into the meta-model and transpose it into a mindscape framework. This allows one to visualize the set of personality types that can emerge, and further allows one to discuss typology

formation from a coherent platform that can integrate different mindscape concepts. Such a meta-model will be useful for understanding the nested levels of investigations from top down (society, organizations, teams, individuals) and bottom-up (from individual personalities, through normative organisational personality, to socio- and economic-political personality at society level).

The recursive living system model

In Figure 1 we offer a generic social viable system model of a super-system (of three systems) which can be identified as "living" if the system interconnections satisfy the properties of autopoiesis[1] (Maturana and Verala 1973, 1980) and autogenesis[2] (Schwarz, 1997). It is a broadly viable system that develops strategies as part of its social "living" processes that enables it to develop policies, the consequence of which include responses to ideas of sustainability where they are of significance to the agency. The cognitive system offers an important directive for the living super-system since it is here that identity constructs occur that act as a referent field of influence for the rest of the super-system. Seeing these systems in terms of fields of influence, the cognitive system operates as a field attractor for the super-system as a whole. Autopoiesis is constituted simply as a network of processes that enables cognitive system activity to become manifested operatively (Schwarz, 1997), and this is conditioned by autogenesis – a network of principles (that may be seen as second or higher order processes) that create a second order form of autopoiesis guiding autopoiesis. The conceptual system maintains conceptual entities that act as a formative reference for the figurative system in which conceptual entities are manifested through autogenesis as structured schematic entities, which create a strategic potential for the super-system. The operative system operates through structured operative entities, manifested by autopoiesis from the figurative system, and from which together with stimuli from its operative environment it undertakes its operative functions. Feedback between each of the systems enables the super-system as a whole to learn.

Autogenesis facilitates an ability to create, organise, and prioritise according to some cognitive interest associated with self-identification that permeates the cognitive system for a given operative context. Autopoiesis facilitates an ability to connect elaborated figurative schemas to a set of possible operative actions that conform to these schemas

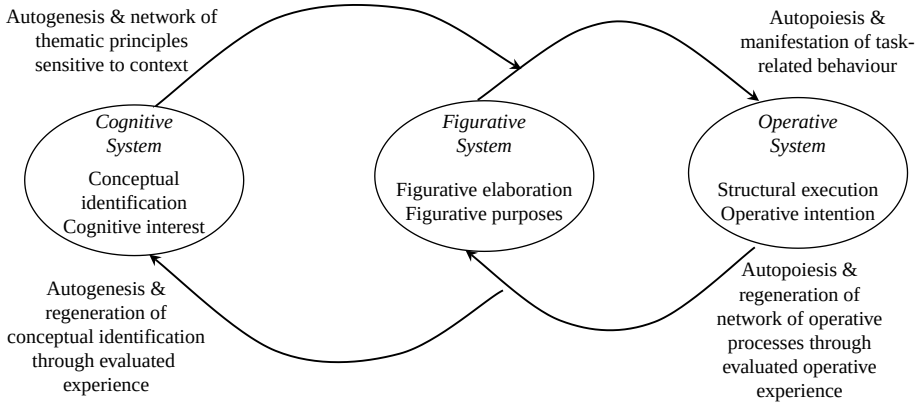


Figure 1.
Generic model of a "living" social viable system

under the given context. Responses may be fed back to the figurative and cognitive system so as to amplify or supress particular figurative schemas or conceptual identifications. Considering autogenesis as a conduit through which a network of transformative processes are active, then it is a generator of the strategic (or figurative schema) laws through which the agency operates. Similarly, an autopoietic conduit is a generator for operative laws and relationships (Schwarz, 1997).

While Figure 1 is a representation of the core concept of a living system, it may be used to provide a model of a cybernetic agency, as shown in Figure 2. Here, the terms autopoiesis and autogenesis have been replaced by Piagetian intelligences. For Piaget (cited in Elkind, 1976, p. 56), intelligence is something that creates an internal connective orientation within an agency (or its personality) towards its environment. This orientation is connected to the capacity of the agency to adapt (Piaget, 1963/2001, pp. 3-4, cited in Plucker, 2012). The Piagetian (1977) intelligences include operative intelligence which frames how the world is understood and where understanding is unsuccessful operative intelligence changes.

Following Yolles *et al.* (2011), autopoiesis is a concept that is quite similar in nature to that originally introduced by Piaget (1963/2001, 1977) in the study of child learning and behaviour – called operative intelligence, and autogenesis is directly related to figurative intelligence.

It should be noted that Figure 2, like Figure 1, is a recursive model (2006) that can be applied to any context that satisfies "living system" criteria, that is where autopoietic and autogenetic networks can be explained to operate for an appropriate supersystem.

Agency and normative personality

Following Yolles (2006) the cybernetic approach adopted here for agency:

- centres on Schwarz's (1997) "living system" theory of adaptive organisation;
- incorporates Habermas' (1971, 1987) theory of knowledge and communication;
- addresses Bandura's (2006) agency theory of human development;
- incorporates aspects of Piaget's (1950) theory of personality development; and
- delivers a theory of normative personality that has embedded within it strong anticipation (Dubois, 2000) as one of its features.

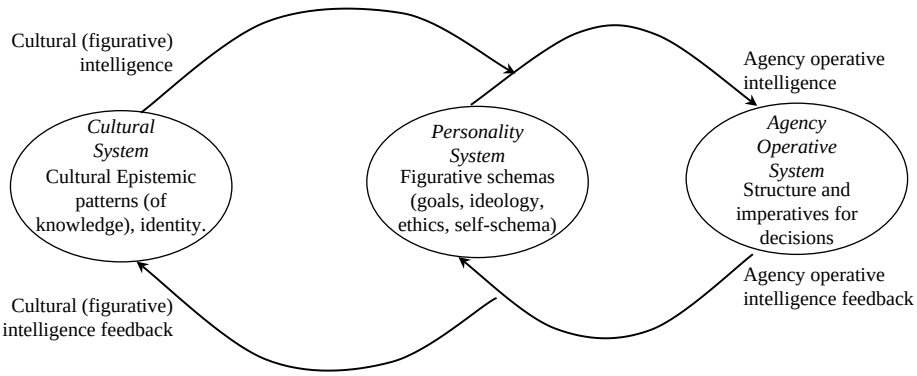


Figure 2.
Generic model for a living system agency

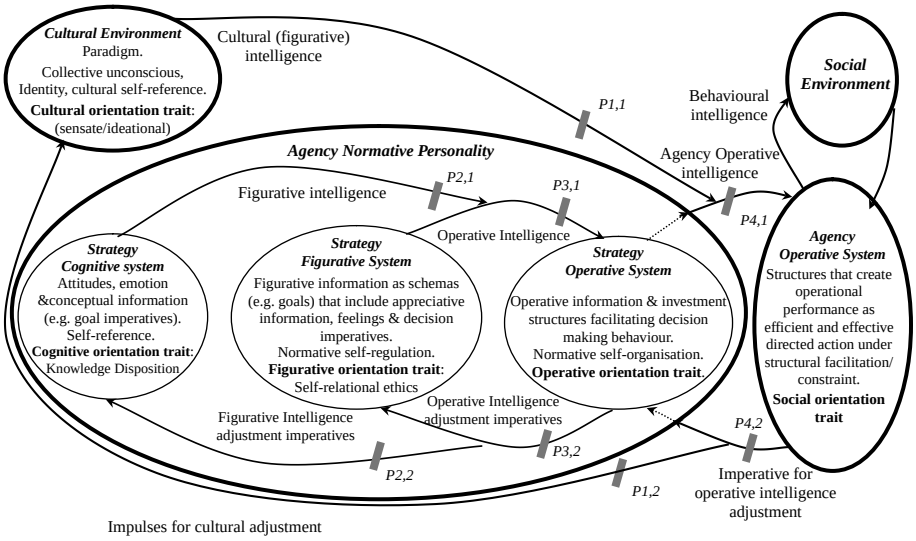
From these basics we develop a meta-theory from which particular detailed theories of cognitive and behavioural development can arise within definable contexts. It constitutes a formal[3] psychosocial framework for the "collective mind" of an agency that is its normative personality that formulates decisions resulting in agency behaviour. This behavioural conduct may be prone to pathologies, resulting in collective misconduct and misconduct.

The term normative personality is not new, being usually used within the context of the ambient normative social influences that exist during the formation and moulding of personalities (Mroczek and Little, 2006). Our interest lies in recognising that the norms in a collective 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 stable collectives develop a common dominant culture within which shared beliefs develop in relation to the capacity of the collective power to produce desired outcomes. Cultural anchors are created that are represented within the paradigm that the agency carries, which enables the development of formal and informal norms for patterns of behaviour, modes of conduct and expression, forms of thought, attitudes and values that are more or less adhered to by its membership. 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 collective's ideological and ethical positioning. This develops with the rise of collective cognitive processes that start with information inputs and through decision processes result in orientation to action. It does this with a sense of the collective mind and self. It is a short step to recognise that the collective mind is associated with normative personality. Where a normative personality is deemed to exist, it does not necessarily mean that individual members of the collective will conform to all aspects of the normative processes: they may only do so "more or less".

Strong anticipation arises in the normative personality through a set of formative traits which function as personality control variables (Van Egeren, 2009), where the values/states that they adopt refer to personality types (Eysenck, 1957), and where the type values of a personality derive from the state of its traits. The trait theory that emerges is based on and reflective of emotional-motivational systems that are able to increase adaptation to classes of stimuli associated with positive and negative reinforcement (Depue and Morrone-Strupinsky, 2005, p. 314, cited in Van Egeren, 2009). For Davis (2000) durable personality traits are usually tightly bound to qualities of emotions, but they may also be defined in terms of preconscious mental dispositions that affect the reflective processes and influence the different categories of cognitive and animated behaviour. They also provide the regulatory patterns that create agency stability. For Fleishman *et al.* (1999) they are also related to performance. In corporate theory the traits have generic characteristics that are domain dependent, and may be seen as normative personality variables that regulate the importance attributed to different classes of information. They are indicative of personality styles that arise from a combination of personality types, and which suggest a collective agency's expected behavioural orientation in relation to that class of information. The types have a special role in personality theory. They are deemed to be responsible for the patterns of behaviour that a personality generates, and since behaviour is closely related to structure which it facilitates and constrains, traits are also connected with

personality structure. Patterns of behaviour are generically defined as an abstraction from a concrete form that keeps recurring in specific, non-arbitrary contexts. It is this very nature that enables an agency's behaviour to be strongly anticipated, even when it comes to their interaction with personal and situational variables. Where it is possible to associate personalities with stable type preferences, a consistent connection to behaviour can be discerned (de Oliveira *et al.*, 2008; Hyldegård, 2009), and this includes the likelihood of determining economic behaviour, even under conditions of uncertainty.

In Figure 3 we show a generic context sensitive "living system" (Yolles, 2006) meta-model, with self-creation and self-production cybernetic control processes. The generic model from which this arises is recursive, and is therefore able to ontologically differentiate attributes within a system. Figure 1 has been set up to represent a durable collective agency with a culture, a normative personality, and an operative capacity. It can operate intelligently, adapt to changing situations, and create and implement its own policies. It enables specific relationships to be introduced within and across systemic domains, as necessary and according to the logical processes that may be proposed within a socio-political situation. The control aspects are more clearly specified than those of Maruyama, involving operative and figurative intelligence with their feed-forward processes, capacities for negative (deviation-counteraction) feedback and positive (deviation-amplification) feedback, self-reference, self-regulation and self-organisation, as well as amelioration of the information itself as it gets manifested across the agency between systems. Efficacy in the manifestation of information between the distinct systems of an agency also plays a role. The efficacy of agencies relates to "the soundness of their thoughts and actions, and the meaning of their pursuits, and they make corrective adjustments if necessary" (Bandura, 2006, p. 165). Efficacy is conditioned by emotive imperatives that derive from emotions and feelings (Adeyemo, 2007) that can be



Note: *Pi,j* (where pathology type $i = 1.4$ and order $j = 1.2$) refers to type-pathologies that can arise through both intelligence limitation and impeded efficacy

Figure 3.
A relational "living system" meta-model of an agency in interaction with its environments

controlled by emotional intelligence (Salovey and Mayer, 1990). Efficacy therefore influences an agent's capabilities to produce designated levels of performance that exercise influence over events that affect life. By assigning such capability to the intelligences, inefficacy can be taken as the performance capability of the intelligences to connect the ontologically distinct systems of the agency in a coherent way.

Figure 3 is a result of thematic combinatorial conceptualizations from which the collective agency maintains its normative personality (Yolles, 2006; Yolles *et al.*, 2011), and allows for the modelling of more or less complexity. It does this through what some refer to as a systemic hierarchy: where systems are structured as a hierarchically nested set of recursively embedded systems, one within another creating more complexity in the modelling process (Williams and Imam, 2006). Thus, complex "bottom-up" interpersonal interrelationships can be modelled that "cause" (through a complex multiplicity of reasons that often are taken as a principle of emergence) higher order systemic forms in which complexity becomes reduced to an invisible horizon of meanings. At the same time, top-down influences can be made to constrain, under normal (as opposed to post-normal uncertain and on the edge of being chaotic) circumstances, the nature of the interactions that are legitimized at the bottom level. Thus, the modelling approach can represent networks of processes at the individual and small group level, as well as their impact on the higher level social influence networks of processes and vice versa (Yolles, 2006).

An agency is not isolated, but interacts with an environment, or with other agencies in an environment, as shown in Figure 3. Here, the agency is shown to have behavioural intelligence, as represented through its overt actions (Ang *et al.*, 2007, p. 6). This is constituted as a structural coupling (Maturana and Varela, 1987) that is responsible for past, present and future interactive history.

The intelligences of an agency, as shown in Figure 3, are internal to the agency and include a form of cultural intelligence (Yolles *et al.*, 2011), and personality intelligences – concepts originally drawn from Piaget (1950). The autogenetic function operates as figurative intelligence enabling it to self-create its collective cognition, and the autopoietic function operates as an operative intelligence that enables it to operatively self-produce its collective cognition. In cybernetic terms, intelligence may thus be seen as a network of relational processes of transformation of a definable set of components of a given domain of the living system:

- through their interactions and transformations continuously regenerate, realize and adapt the relations that produce them; and
- constitute its socio-cognitive nature as a concrete unity.

Figure 3 embraces the idea that a living system is embedded into a cultural environment and interacts with a social environment, a notion extended by reflecting on the recognition that there are consequential influences and interactions with these environments. Central to the understanding of the model in Figure 3 are two principal features:

(1) the living system can be seen as an agency equipped with a necessary and sufficient set of intelligences that has the capacity to create and pursue the system's own goals; and

(2) it may self-organize and respond to a changing environment through adaptation (Bandura, 2006).

The intelligences may be seen as the driver for and the constraints of the achievements that a living system may be able to materialize: without intelligences there are no achievements; with low levels of intelligence poor results develop; and with high levels of intelligence good results can be achieved. Several forms of intelligence are widely referred to in the literature, including: intelligence at large (general intelligence), cultural, social and emotional intelligence. In the context of strategic thinking and operational activity, we further distinguish between figurative (self-creational) and operative (self-producing) intelligence. Bandura's (2006) notion of efficacy as referred to earlier is also useful, here representing the capability an agency has in the manifestation of information between the systems of its personality, and impacting on performance and emotions. These intelligences are responsible for the manifestation of entities in a given situational context between the ontologically distinct systems of an agency. Inefficacy in the function of the intelligences may not only result in the stimulation of emotional/feeling conditions and a diminution of performance. In more sever conditions of inefficacy, contexts can be misrepresented. This not only results in agency disorder. As we shall explain in due curse, this can result in imperatives for a shift in trait orientations, and hence the creation of a shift in agency orientation against its natural contextual tendency. Now since inefficacy is a form of pathology, it follows that pathologies can be responsible for agency orientation, and that there is likely a relationship between the density of pathologies that an agency experiences and the degree of disorder that it possesses.

The figurative system in Figure 3 operates as a strategic agency which is formulated within its ideological and ethical frame. As such it also has "strategic" figurative and operative intelligences represented by $P2,1$ and $P2,2$, and $P3,1$ and $P3,2$. The nature of these intelligences is due to their sensitivity to contexts that arise from the meanings of the systemic domains, and since different components of the model have different meanings, so they are distinct from other figurative and operate intelligences in other parts of the model.

This allows us to consider intelligence as a systemic function. Such a notion has been identified by Hämäläinen and Saarinen (2007) as intelligent action in real time and within complex, interconnected, and changing structures, in contexts and environments, where human agents tune to, react to and influence one another in those subtle and sometimes-not-so-subtle ways that are unique to us as human beings. We may develop on this by proposing an enhanced definition for intelligence within the context of an economic system as: the general ability of an agency (a living economic system) to appreciate and harness its own knowledge as information about its environment (feedback processes), to construct new knowledge and to generate new or better capabilities through the manifestation (resulting in forms of internalization) of information about its experiences (feedback from the external environment-counterparts in the task environment, feedback from agents within the society/economy – stakeholders, institutions – and overall evaluation) into other parts of the system, and from that manifested information, to pursue its goals effectively and efficiently.

Into this definition, we can integrate all extensions and differentiations of intelligences, as far as cultural intelligence, socio-economic (behavioural) intelligence and agency operative intelligence are concerned, and as long as:

- there is an action or application oriented network of processes (feed-forward process) and a corresponding feed-back network of processes; and

- each type of intelligence weights the relevance, importance, efficiency, and effectiveness of these processes and can attach different importance to forward linkages and feedback linkages in the processes of self-reproduction and self-organization.

Figure 3 also indicates that there are five formative traits in any agency, one of which defines its cultural orientation, three of which define its normative personality (the cognitive, figurative, operative orientations), and the last of which defines its social orientation.

As indicated by Yolles *et al.* (2011) and Fink *et al.* (2012), in the context of organisational culture research, these are bi-polar value dimensions that typify agency and establish a basis for strong anticipation. If we consider for instance the context of a national economy, this agency is therefore able to make use of the concept of bi-polar traits, and indicate an orientation in the respective domains for the forward linkages (i.e. action related processes) or feedback linkages (i.e. information collection, adaptation and learning processes). As a result, given understanding the five type values that an agency has adopted can enable strong anticipation to be manifested, thereby creating macro-economic expectations. While these five traits are representative of the agency as a whole, particular aspects can be examined individually. The recursive nature of the modelling process that delivers Figure 3 enables a drilling down to permit a more detailed examination of microscopic socio-economic phenomena, to which macroeconomic policy should be responsive. Sensitivity to more micro-economic features can be lost with pathologies (indicated by the bars by Pi,j, where $i = 1,4$ and $j = 1,2$) that arise in the agency system. These pathologies inhibit the normal functioning of the intelligences, and degrade the performance capability of an agency. We shall return to a discussion of these pathologies in due course.

The formative traits that control the agencies can be related to Maruyama's mindscape theory, which can be used to explain agency behaviours, but to do so will require the introduction of Mindscape theory.

Maruyama mindscapes

Following Maruyama (1980, 2008b) and Boje (2004), four types of mindscapes always exist in any culture, though their percentage distribution varies across cultures. They correspond to the following cognitive/cogitative/perceptual types of mindscape with determined epistemic natures:

- ***H*** (Hierarchical/Bureaucrat): hierarchical, homogenicistic (conventionalist), classification (neat categories), universalist, sequential, competitive, zero-sum, oppositional, extension, one truth, optimalist, ethics to dominate the weak, ingroup, self-stereotyping, group bounded, prone to collectivism.
- ***I*** (Independent/Prince): independent, heterogenistic (unconventionalist), randomising (embraces uncertainty), individualistic, uniqueness, negative-sum, separation, caprice, subjectivity, self-sufficiency, poverty self-inflicted, prone to individualism.
- ***S*** (Social/Reformer): heterogenistic (non-conventionalist), interactive, pattern-maintaining, mutualising, simultaneous, cooperative, positive-sum (mutual aid through individual difference so all gain in interaction), absorption, stability, polyocularity, cause-effect, harmonious patterning, interactions are non-hierarchical, positive sum, self-contained universe.

- ***G***(Generative/Revolutionary): liberational, heterogenistic, interactive, pattern-generating, mutualizing, simultaneous, cogenerative, positive-sum, unfolding, evolution, polyocularity, pattern-generating causal loops, non-hierarchical, diversity, relational emergence.

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 type 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 is clear 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, notes 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 are a result. Cultures are seen to be epistemologically heterogeneous, and a number of canonical mindscape types exist that are each represented within them in some proportion. These epistemological types 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.

There is an interesting feature of the four mindscape types identified by Maruyama (1988), which is that the ***I*** and ***H*** types are obverse "two sides of the same coin", as are ***S*** and ***G*** types. This obverse nature is, however, a non-linear one, so that it cannot be said that ***I*** and ***H*** types or ***S*** and ***G*** types are polar opposites of each other.

In Mindscape theory the personality of an agency is described in terms of epistemic cognitive meta-types (rather than the individual cognitive characteristics), and therefore really constitutes a meta-theory (offering meaning able to respond to both theory-doctrine and problem based issues). It identifies at least four basic epistemic types of mindscape (Maruyama, 1988). He originally referred to the types called independent, hierarchical and mutualists (Maruyama, 1974) but later settled on the four which became referred to by their initial letter and called: hierarchical, independent, social and generative types. An epistemic description of each of these mindscapes has been proposed by Dockens (2004) (adapted from Maruyama, 1980) as shown in Table I. Here, the epistemic catagories cover, for Dockens, a typology of knowledge that constitutes the basis of the mindscape types.

Beyond this Dockens also notes that context is important to mindscape type, and different contexts can result in different types for any given agency. Indeed, he formally distinguishes between the 3ps: (public: private: personal) contexts, represented for instance as $\boldsymbol{X_1}$:$\boldsymbol{X_2}$:$\boldsymbol{X_3}$ mindscapes supposing that $\boldsymbol{X_i}$ will represent one mindscape type. This notion is consistent with that of Habermas (1987) in which he distinguishes between the internal, external and social worlds, and provides a basis for explanations about why an agency may differentiate its behaviour in each of the private, personal and public contexts that it experiences. Dockens notes that a personality in which $\boldsymbol{X_i} = \boldsymbol{H}$ say for all i = 1, 3, and where the 3ps are the same and we are dealing with an ***H*:*H*:*H*** personality, then it is easier to is easier to predict patterns of behaviour since

Epistemic categories	Mindscape meta-types			
	Hierarchy	Independent	Social	Generative
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 I.
Description of mindscape meta-types

Source: Dockens (2004)

an inquirer does not have to differentiate contexts. Such anticipation may become even more problematic when the 3ps become confused (Weintraub, 1997; Sheller and Urry, 2003; Wyatt *et al.*, 2000). Hence, each of these contexts creates proprietary imperatives for the mindscape types to be adopted catastrophically (Thom, 1989), as contexts shift. There is some evidence for this, but it requires that we recognise that the mindscape types ***I*** and ***H*** are consistent with individualism and collectivism, respectively, especially within a political context when an agency adopts parochial interests (Bandura, 2006). Here, individualism is an ideology that centres on the individual self, while collectivism rather centres on collective structures and processes involving commonly agreed and understood purpose or interests (Triandis, 1995).

That an agency may take one of these types under one context and shift to the other as context changes is shown by Tamis-LeMonda *et al.* (2007) in their study of parents with interest in the development goals of their children. They argue that cultural value systems seen to be polar opposites may be viewed as conflicting, additive, or functionally dependent. In particular, when parents embrace individualism (e.g. the ***I*** mindscape) or collectivism (e.g. the ***H*** mindscape) it occurs because they are in dynamic coexistence which occurs in response to change across situations, developmental time, and in response to social, political, and economic sub-contexts. Thus, we recognise that each of the 3p contexts may take their proprietary social, political and economic sub-contexts.

Tung (1995) notes that for Maruyama (1993), mindscapes constitute epistemological structures that refer to the way in which people process and interpret information, and this is therefore part of cognitive processing (Galavan, 2005). The four epistemic meta-types identified by Maruyama maintain proprietary cognitive types which differentiate agencies on the basis of logical processes and the way in which they analyze and synthesize information. These four epistemological types and their mixtures are claimed to account for nearly two-thirds of all peoples in the world (Maruyama, 1993).

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 Briggs, 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, p. 2). Rather it has a relational basis.

Mindscape theory arises from Maruyama's (1963) realisation that control processes such as cycles of deviation-counteraction and deviation-amplification are important to an agency (Boje, 2004). Within a cognitive context, when new conceptual information comes to an agency it can initiate either cycle. Deviation-counteraction seeks to control deviations, while deviation-amplification enhances them and adds to the existing heterogeneity. The selection of one form of cybernetic control or another is determined by the agencies cognitive type, which was referred to as mindscapes.

Maruyama originally worked with three mindscape types (Maruyama, 1974a) and sometimes with five (Maruyama, 1974), though he eventually decided to settle on just

four types, In developing these mindscapes empirically he used two forms of measuring instrument, a questionnaire, and a pictograph (Maruyama, 2001). In 1976 his work converged with that of Harvey (1966), who had had been giving psychological tests to university students over several decades, and as a result had identified four frequent epistemological types. Harvey referred to these as System 1-4. The Harvey systems are defined as follows:

- *System 1*. High absolutism and closeness of beliefs; high evaluativeness; high positive dependence on representatives of institutional authority; high identification with social roles and status positions; high conventionality; high ethnocentrism.
- *System 2*. Deep feelings of uncertainty; distrust of authority, rejection of the more socially approved guidelines to action accompanied by lack of alternative referents; psychological vacuum; rebellion against social prescriptions; avoidance of dependency on god, tradition.
- *System 3*. Manipulating of people through dependency upon them; fairly high skills in effecting desired outcomes in his world through the techniques of having others do it for him; autonomous internal standards, especially in the social sphere; some positive ties to the prevailing social norms.
- *System 4*. High perceived self-worth despite momentary frustrations and deviation from the normative; highly differentiated and integrated cognitive structure; flexible, creative and relative in thought and action; internal standards that are independent of external criteria, in some cases coinciding with social definitions and in others not.

In order to relate his mindscapes to Harvey's systems, Maruyama has used a technique that we shall call epistemic mapping. In this, a description of two entities that need to be related for comparison are formulated in terms of a set of keywords which are then related to each other to determine the degree of commensurability. Incommensurability would mean that there are some contradictions in the relationships. The resulting epistemic mapping relating Harvey to Maruyama was identified as in Table II.

Maruyama (2008a, p. 84) further notes that his:

> Type H, I and G are almost identical with Harvey's Types 1, 2 and 4, respectively, while Maruyama's Type S is quite different from Harvey's Type 3 [. . .] Maruyama's Type H and Harvey's Type 1 are prone to collectivism, ingroup homogenization, self-stereotyping, group-against-group hostility, violence and terrorism. On the other hand, Maruyama's Type G and Harvey's Type 4 can remedy them. Harvey's data show that even within one country, there is heterogeneity of individual cognitive/cogitative types.

Mindscape theory argues that a social system develops a preference for one personality meta-type over another for historical or political reasons, and ignores or suppresses individuals of other types (Maruyama, 2002, p. 167). Using mindscape theory now provides a broad 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.

Boje (2004) was interested in creating a generative basis for mindscapes, and he identified three Foucaultian (1972) traits for this: knowledge, ethics and power, and each with bi-polar enantiomers[4]. These may be described as follows:

Type 1	*Type 2*
Absolutism = homogenist, hierarchical, one truth	Uncertainty = random
Evaluativeness = hierarchical	Distrust = independent
Institutional authority = hierarchical	Rejection = separation
Roles and status = classificational, hierarchical	Psychological vaccum = random
Conventionality = homogenist	Rebellion against social prescriptions = separation
Ethnocentrism = classificational, competitive, opposition	Avoidance of dependency = independent
Type 3	*Type 4*
Manipulation: no equivalent in Maruyama	Self-worth = heterogenist, cogenerative, outbreeding
Having others do: no equivalent in Maruyama	Deviation from the normative = pattern-generating
Autonomous internal standards = independent	Diffentiated and integrated = heterogenist, interactive
Passive ties = pattern-maintaining	Flexible, creative, relative = heterogenist, pattern-generating, outbreeding
	Internal standards = heterogensit, interactive, pattern-generating

Table II.

- *Knowledge*. Boje (2004) refers to an agency's will to historically constituted and informationally scripted patterns of knowledge, so that an actor is part of a knowledge script system and responds to and generates informational consequences. Boje also distinguishes between the bi-polar types within the context of a will to knowledge, and these correspond to transaction scripts and transformation scripts, respectively. Transactional scripting involves simple repetition and sameness that reflects on status quo, while transformation scripting is about embracing uniqueness and change in a system through emergence and deviation, and reflects on the possibilities that emerge through autonomy. It involves Maruyama's notion of the dialectic of deviation-counteracting and deviation-amplifying in the scripts. This knowledge scripting is part of secondary socialization (e.g. by providing them with socially acceptable values). Through this, agents internalise the scripts, as well as the character type expected for agents in their environment. This script internalisation is constituted as a means of formation, and enables an agent to be influenced by knowledge based information that relates to its social environment. It affects structures and processes that define agency forms related to intentions and behaviours.
- *Ethics*. Boje (2004) considers regulation within the context of Foucautlian ethics which is connected with the relationships we have with ourselves and the mutual ways in which agents are both controlled by others and control by self. Control by a generalised other within a socio-cultural context and is hence polyocular, while achievement is more connected with mono-ocularity self-interest and control by self. As such the bi-polar enantiomers that permit this trait to create an orientation are mono-olcularity (one view) and polyocularity (many-views).
- *Power*. Boje (2004) notes that agents are not free to say just anything when or where they wish, and certain types of knowledge are forbidden in some social environments. This appears to be connected with a realisation of the nature of the constraints and a technical ability to engage with the environment and to

establish predictions and controls. This presupposes the existence of structure that both anticipates and facilitates behaviour. The enantiomer options that Boje assigns to this trait is an orientation to power as may be related to hierarchy, or service and may be related to egalitarianism.

These were set up as a trait space, each trait having its own bi-polar enantiomers. Boje then set the four mindscapes into this space, the location being identified by hypothesis. He also postulated four other mindscapes stable mindscape clusters. The generation of these combinatorial options comes from the recognition that they may be generated as 2^n, where n represents the number of traits with bi-polar enantiomers, so that for $n = 3$ there are eight possible combinations to be formed.

In the following two parts of this paper (Yolles and Fink, 2013a, b), based on cybernetic systems theories, we shall generate an alternative model to that of Boje that is capable of establishing a formal structure which can integrate existing cultural data.

Notes

1. Autopoiesis (Schwarz, 1997; Maturana and Varela, 1987) explains how a "living system" self-produces its core relational explanations of reality that influence behaviour. This defines for the personality system it is own boundaries relative to its environment, develops its own unifying operational code, implements its own programmes, repro duces its own elements in a closed circuit, obeys its own laws of behaviour, and potentially satisfies its own intentions (Jessop, 1990). It also self-produces the network of processes that enable it to produce its own personality components that exist in cognitive, figurative and operative bases.
2. Autogenesis is a second order form of autopoiesis (Schwarz, 1997) that has a higher level of processes – that is meta-processes that may be represented for instance as guiding personality convictions, principle influences, or even spirit. It occurs when a selectable network of these meta-processes is able to project into the operative couple a set of espoused values as attitudes and mental schemas and operative personality patterns. In effect autogenesis defines the autonomous system through the creation of its own set of laws.
3. By the word formal we mean a set of explicit propositions that define a logic which establishes a framework of thought and set of conceptualisations that enables organised operation to occur, and problem situations to be addressed both theoretically and empirically. Formalisms also constrain the way in which situations can be described by the rules that they pursue. According to Kyberg (1968, p. 20) formal logic provides a standard of validity and a means of assessing validity.
4. The term enantiomer means a mirror image of something, an opposite reflection. The term derives from the Greek *enantios* or "opposite", and is used in a number of contexts, including architecture, molecular physics, political theory, and computer system design. We use it in the sense of complementary polar opposites. The related word enantiodromia is also a key Jungian concept used in his notions about consciousness (e.g. www.endless-knot.us/feature.html), and it is the process by which something becomes its opposite, and the subsequent interaction of the two. For Jung the word enantiodromia represents the superabundance of any force that inevitably produces its opposite. Consequently, the word enantiodromia often implies a dynamic process which is not necessarily implied by the word enantiomer. By using the simpler word enantiomer we shall not exclude the possibility of any dynamic action that may have been implied by the term enantiodromia.

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