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31 May 2012

Values, Evolutionary Economic Theory and Agency

Submission to IACCM 2012, at Naples, Italy

Abstract

Purpose:

In this paper we prepare for addressing the 'economics/cross-cultural management interface'. We show that bi-polar value perceptions fit into an agency model of an economy.

Design:

Modern views of economic processes have moved away from the traditional view of closed systems, and there has been a tendency to cite them not only as open, but also displaying agency characteristics. In this paper we apply a cybernetic viable systems approach to arrive at an agency economic model.

Findings:

Using the modeling approach, central ideas of major economic thinkers (F.A. Hayek, J. Schumpeter, H. Simon, and T.Veblen) are linked together into an agency model with value perceptions (P. Sorokin, S. Schwartz and G. Hofstede). E.g., knowing that intellectual autonomy is a prerequisite of innovation, we may relate some findings of Joseph A. Schumpeter to the cognitive domain, which is ruled by the trait [a bi-polar value dimension] “embeddedness vs. intellectual autonomy” of Sagiv and Schwarz (2007).

Research implications and limitations:

The research shows that one can model interplay effects of social and cultural change with the economy. It is based on a deliberate and far from complete selection of perceived important findings in history of economic thought and a deliberate selection of national or global value concepts that fit the model. Investigation into more and different views from economics and the variety of cultural dimension studies seems appropriate.

Practical implications:

This exercise sheds some light on the roots of paradigm changes in economic history. Future studies may engage in research into the practice of economic policy making with a view to predominant values in a society, and in investigation into ‘paradigm wars’ in industry, finance, and across broad sectors.

What is original/ what is the value of the paper?

To our knowledge such an attempt was not undertaken before.

Keywords: institutional economics, generic agency model, national values, history of economic thought
JEL classification: B15, B25, B52, C10, Z1, Z13

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Introduction

In the aftermath of the 2009 economic crisis quest for radical change emerges and alternative economic policy making is deemed necessary, as voiced by scholars who advocate renewed social and evolutionary approaches towards economics. This opens a view on the 'economics/cross-cultural management interface': Since all economic systems are held by social systems, the values of social systems must have a bearing on dominant economic theories, or vice versa.

A link between economic theory approaches and values in social systems can be theoretically founded on a cybernetic and dynamic social viable systems model (Yolles, 2006) which is organized at least into three spheres: cognitive, figurative and operative system. The cognitive system regulates the predominant attitudes about what is a ‘problem’ and how it can legitimately be resolved. The figurative system regulates the legitimate visions of the future, and the operative system identifies institutions, rules and actual behavior.

Such a system is self-referential and applies observable self-organizing practices (as e.g. regulating institutions, structures in politics and in organizations), which may be distinct from actual behavior dependent on the rule obedience of agents within the system. This distinction permits the internalization of institution building into systems (e.g. self-regulating institutions within industries or national economies, or at the global economy level, e.g. organizations like the International Monetary Fund).

The dynamic and cybernetic nature of the model that we will adopt implies openness in two respects. The system is: (a) open in the sense that future outcomes cannot be deterministically identified, and (b) that economic systems interact with other economic systems and with the natural environment. Thus, systems are open to external influences and external (e.g. natural) shocks. External influences and internal system dynamics together generate networks of processes with open outcomes, which are never stable but drive a permanent change process. This is the reason, why in this very first approach we assume a historic approach, which is guided by a theoretical perception of system dynamics.

In course of this paper, we will investigate the possible interrelation between cultural attitudes and selected findings of economic theory. The search for links is guided by viable systems theory, which reflects on the cultural and operative environments of a social system, and which by itself consists of the cognitive sub-system the figurative sub-system and the operative sub-system - including self-regulating institutions and actual behavior.

The theoretical model permits to restrain the number of dimensions to be considered and to re-interpret the dimensions of national or global culture and outcomes of studies about cultural differences in actual behavior (cultural standards) as traits of a dynamic, cybernetic viable systems model.

We structure the paper in the following way: We first describe the model of an economic "living system" in interaction with environments. After that we deal with culture and socio-cultural change between ideational and sensate orientation according to the theory of Sorokin (1964). Next, we provide descriptions of a few more bi-polar value concepts which fit the concept of bi-polar traits in our model and show that several cultural value studies, like those of Sagiv and Schwartz (2007) and Hofstede et al. (1990) can be easily related to our concept of bi-polar traits of our agency model of a "living economic system".

In the last section of the paper, we look into the history of economic thought, especially into the early rise of evolutionary economic theory by providing a brief account of the systems of thought of F.A. Hayek, J. Schumpeter, H. Simon, and T. Veblen. We highlight complementarity among them with respect to their ideas about the dynamic interplay of agency and structure. Modern evolutionary economists pursue similar paths to generate an integrated and generic picture of an economy, e.g. through developing the notion of a rule-based view of the economy, which similar to the cybernetic theory of social viable systems (Yolles, Frieden & Fink 2012) also allows mathematical and computational explanations along agent-based simulations for example. We discuss the importance of a historical event-based economic theory, which somehow decayed in standard textbook economics.

1. The Model of an "Economic Living System"

In order to develop our model, we shall first point to our philosophical approach, which is to adopt a cybernetic psychosocial view of a behavioral agency defined as a durable socio-economic collective with a collective mind. Such psychosocial approaches to the modeling of organizational processes are not new (Weick, 1969 & 1995; Brown, 2003), and can be used to make organizations compact, intelligible and understood (Cornelisson et al. 2008).

A behavioral agency is seen as having the cognitive capacities of intention, forethought and the ability to react and to reflect, and it is from these capacities that the *agentic perspective* arises through which adaptation and change in human development occurs (Bandura, 2006). 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 behavior and contributors to their life circumstances. With respect to social and economic systems we can refer to their capacity of social and economic policy making.

An agency is not isolated, but interacts with an environment, or with other agencies in an environment, as illustrated in Figure 1. Here, the agency is shown to have behavioral intelligence, as represented through its *overt actions* (Ang, Van Dyne, Koh, Ng, Templer, Tay & Chandrasekar, 2007, p.6). This is constituted as a structural coupling (Maturana and Varela, 1987) that is responsible for past, present and future interactive history.

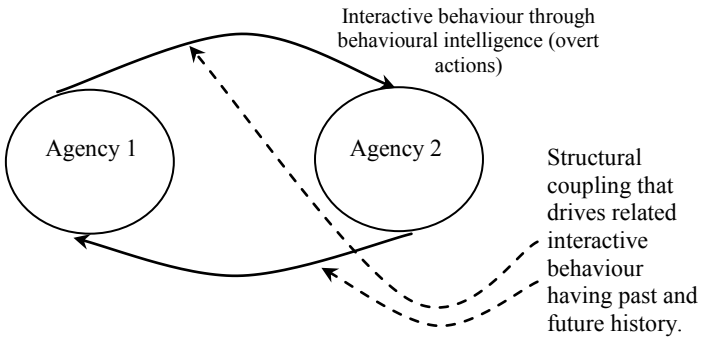


Figure 1: Two interacting agencies (one of which may be an environment)

An agency may be seen as a "living system" that may be modeled to consist of three systemic domains: a cognitive system (meta-systemic aspects), a figurative system (purpose) and an operative system (structure that supports behavior and action); and it is constituted through an autogenetic and an autopoietic function (Figure 2).

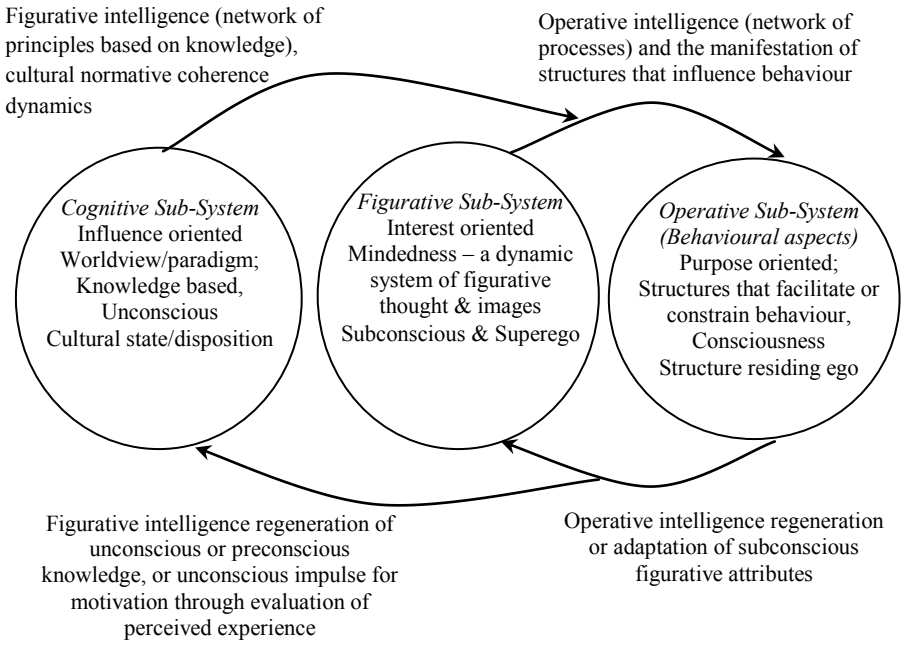


Figure 2: Agency Model as a *"Living System"*

While this figure defines a social agency context, it should be recognized as a meta-model having the capacity to generate more detailed particular models. The generic approach upon which this is based originates with Schwarz (1994, 1997, 2001), and is able to explain how persistent viable systems are able to maintain themselves, change, and die. Its origin, according to Schwarz (2005), arose as a general theory of viable autonomous systems, and its creation was stimulated during the preparation for a course of lectures on the "Introduction to Systems Thinking" at the University of Neuchâtel, in particular by Prigogine's dissipative structures theory, Erich Jantsch's (1980) Self-Organizing Universe, Maturana and Varela's (1979) autopoietic approach and of course embedding cybernetic concepts. Schwarz tried to extract the basic common features of these different approaches and produce a unique meta-model that constitutes a trans-disciplinary epistemo-ontological framework, from which other phenomenological models could be constructed through a combination of logical deduction

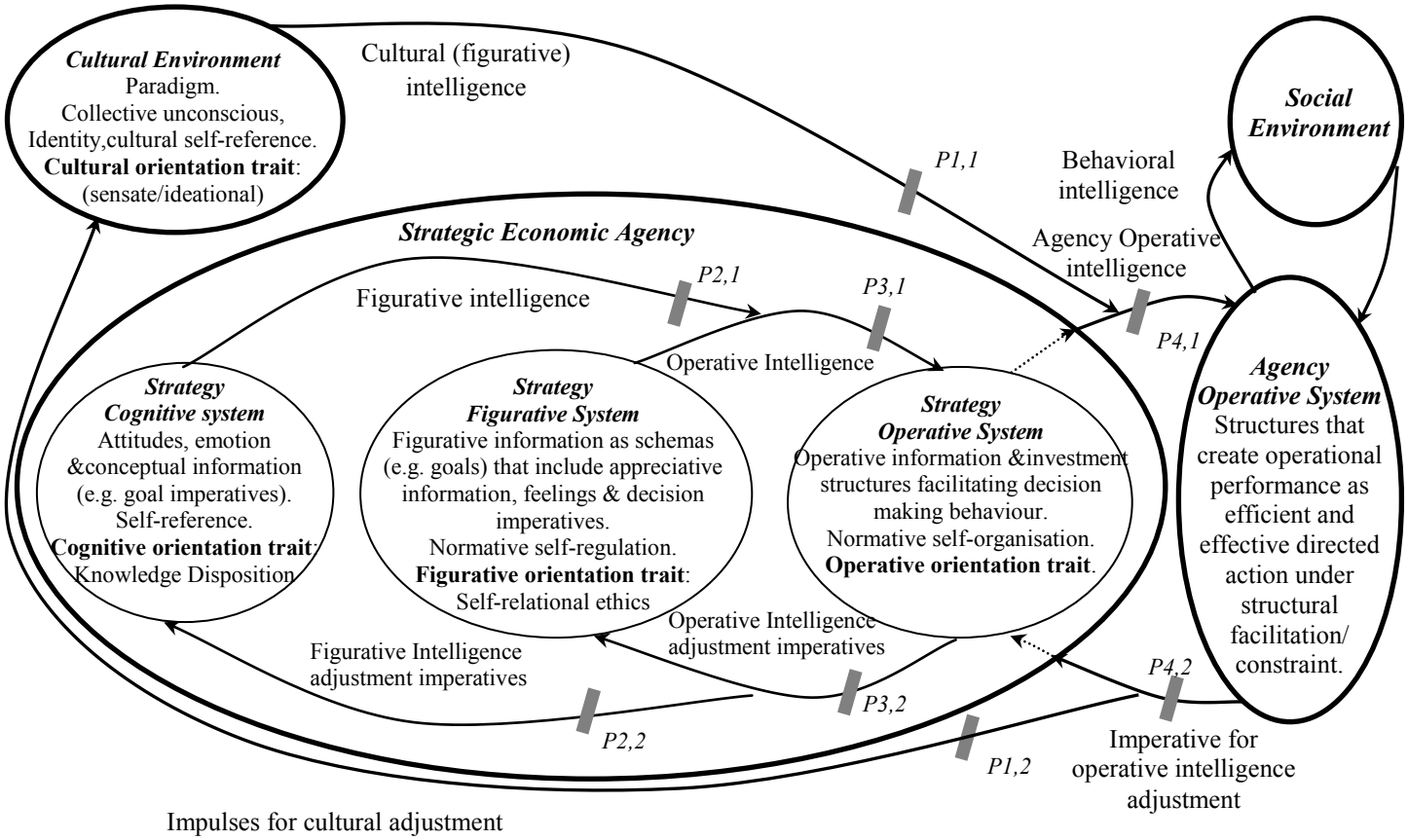
and intuition. The meta-model itself has internal dynamics, coherence and self-referential character, and it also had resonances with *philosophia perennis*. While many (phenomenological) models show that the evolution of systems go through the successive stages of emergence, growth, stability, and decay, the interest of this meta-model is its global coherence and it is distancing itself from the foundations of the usual reductionist, materialistic, dualistic, realistic, mechanistic approach to modeling.

The particular form of Figure 2 has its base in Yolles (2006) for socio-cultural contexts. Its structure is defined analytically through its ontology, its content by its epistemology, and its behavior through it phenomenology. The content derives from a variety of works that include contributions from Beer's cybernetic approach, Habermas's (1971) Knowledge Constitutive Interests, and Marshall's (1975) knowledge schema that links with the ideas on generic forms of knowledge by Schutz and Luckmann (1974). The general model is referred to as Social Viable Systems (SVS), and its epistemological nature as Knowledge Cybernetics (Yolles, 2010). In developing SVS as a socio-cultural meta-model, it also needed to take into consideration communications processes. In doing this it has taken heed of the ideas of Beer (1979), ideas on lifeworld by Schutz and Luckmann (1974), by Habermas (1987) in his theory of Communicative Action, with some incidental reference to Luhmann's (1986) social communication. Overall, the SVS meta-model is intended as a way of creating social geometries that can explore and explain complex dynamic situations.

More recently it has developed a socio-cognitive dimension and can be regarded as an adaptive social or collective agency (Yolles, Fink and Dauber, 2011) that is consistent with Bandura's (2006) theory of agency. This, while centering on the socio-cognitive personality, explains its "bottom-up" nature, where socio-cognitive networks of processes maintain relationships from which principles of personality and performance capability arise. Figure 3 is a result of such combinatorial conceptualizations from which the collective agency maintains a "collective personality" (Yolles, 2006; Yolles, Fink & Dauber, 2011) which is fundamentally relational, allowing for the modeling of more or less complexity. It does this through what some refer to a systemic hierarchy: where systems are structured as a hierarchically nested set of recursively embedded systems, one within another creating more complexity in the modeling process (Williams and Imam, 2006). Thus, complex "bottom-up" interpersonal interrelationships can be modeled 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, under normal circumstances (as opposed to post-normal) top-down influences can be made to constrain the nature of the interactions that are legitimized at the bottom level. Thus, the modeling 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).

In the generic model, autogenesis and autopoiesis are constituted as forms of agency intelligence (notions drawn from Piaget, 1950) that contribute to the capacity of the agency to function as it requires (Yolles, Fink, Dauber, 2011). The autogenetic function operates as a figurative intelligence enabling it to *self-create* its cognition, and the autopoietic function operates as an operative intelligence that enables it to operatively *self-produce* its cognition. In cybernetic terms, intelligence may thus be seen as a network of relational processes (conditioned by meta-processes) of transformation of a definable set of components (or meta-components) of a given domain of the living system: (i) through their interactions and transformations continuously regenerate, realize and adapt the relations that produce them; and (ii) constitute the socio-cognitive living system as a concrete unity.

Such a concrete unity is representing an open socially viable economic system, because: a) the development path of the system is open in the sense that it maintains permanent system dynamics driven by the internal autopoietic and autogenetic processes and the sub-units within the system; and b) it is open in the sense that the system by itself is to be seen as a sub-system of a larger system.



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: An Economic "*Living System"* in Interaction with Environments

Figure 3 embraces the idea that a concrete "living" economic system (e.g. a 'national economy') is embedded into a cultural environment and interacts with a social environment, recognizing 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" economic 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: intelligence at large (general intelligence), cultural, social and emotional intelligence. In the context of strategic thinking and operational activity, we may further distinguish between figurative and operative intelligence. It is also known that gaps between desired and actual efficacy impact on work satisfaction and emotions, i.e. impact on

emotional intelligence. In a nutshell: the system's intelligences impact the effects of policy making.

In Figure 3 it is worth noting that the Strategic Economic Agency is a replacement for the figurative system shown in Figure 1, and this collective "normative personality" model is a recursion of the core "living system" model that generates Figure 1 in the first place. 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 model allows us to consider intelligence as a systemic function. Such a notion has been identified by Hämäläinen & 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, which are unique to us as human beings.

In the model specific context, we define two conditions for all extensions and differentiations of intelligences, as far as cultural intelligence, socio-economic (behavioral) intelligence, and agency figurative and operative intelligence are concerned: (a) there is an action or application oriented network of processes (feed-forward processes) and a corresponding feed-back network of processes, and (b) each type of intelligence comparatively 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.

As indicated by Fink et al (2012), in the context of organizational culture research, so called bi-polar value dimensions can be interpreted as traits of the normative personality of the organization. The interpretation of a national economy as an agency allows making use of the concept of bi-polar traits. The bi-polar traits in the model of the economic "living system" (Figure 3) indicate preferences in the respective domains for the forward linkages (i.e. action oriented processes) or feedback linkages (i.e. information collection, adaptation and learning processes).

In the following, we shall present and discuss the five traits of the model in Figure 3. First we devote a bit more space to the Cultural orientation trait: "ideational vs. sensate" by Sorokin (1964). Next, we shall briefly describe three traits derived from Sagiv & Schwartz (2007): Cognitive orientation trait: "embeddedness vs. autonomy", Figurative orientation trait: "mastery vs. harmony", and Operative orientation trait: "hierarchy vs. egalitarianism". In addition, we also refer to Agency Operative Intelligence with "open vs. closed system" by Hofstede et al. (1990), which reflects about the general attitude an agency is having towards other agencies in order to pursue its own interests, and Behavioral intelligence, which aims at finding common ground for joint (economic) success or rather following reasons for opportunistic or exploitive relations. In this context, we can refer to the trait "pragmatic culture vs. normative culture" by Hofstede et al. (1990)

It is worth noting, that in several other studies additional traits or some traits with similar meaning were identified. Interestingly, the Hofstede et al. (1990) dimensions, which these authors called 'practices', do not relate to our concept of cultural or cognitive orientation, but rather relate to figurative orientation (Process-oriented vs. Results-oriented), or operative

orientation (Tight Control vs. Loose Control) and relationship to task environment (Normative vs. Pragmatic; Open System vs. Closed System).

In addition, the value dimensions of the World Values Survey (Welzel and Inglehart, 2005, 2008), i.e. the "self-expression values" and "secular-rational values" refer to cultural orientation. These values seemingly were undergoing a long term change closely correlated with weaker resource constraints or increasing resource abundance. In strongly resource constraint societies 'survival values' dominate over self-expression and secular rational values. However, there was some indication that the long term trend towards higher "self-expression values" and "secular-rational values" came to an end after 1980 (see data in Welzel & Inglehart 2008). Despite the importance of these findings, at this point we give some preference to refer in more detail to the views of Sorokin (1964) who also offers a theory of socio-cultural change, which basically is not wealth or resource dependent.

2. The Cultural Environment and Socio-cultural Change (Sorokin 1964)

Culture may be seen as being constituted through the shared norms, values, beliefs and assumptions, and the behavior and artifacts that express these orientations - including symbols, rituals, stories, and language; norms and understanding about the nature and identity of the social entity, the way work is done, the value and possibility of changing or innovating, relations between lower and higher ranks, the nature of the environment (Yolles, 2006; Williams et al, 1993). All durable societies have a culture. This is explained by Schaller, Conway & Crandall (2008) when they refer to Sumner's realization that culture results from "the frequent repetition of petty acts" (Sumner, 1906: 3) that result in what he calls folkways. They further note that these cultural folkways "are not creations of human purpose and wit" but are instead "products of natural forces which men unconsciously set in operation" (Sumner, 1906: 4) and which develop through fundamental psychological processes that govern the thoughts and actions of individuals.

Culturally based social groups (socio-cultures) are not static entities that are just shaped simply in reaction to external forces. As Kemp (1997) explains, the reason is that socio-cultures are dynamic systems, constantly in a state of change generated by the properties within the system. In other words human cultures do not 'change', but are rather always in a 'state of change'. They form historically not as discrete entities, but through continuous development. Thus, cultures can be defined less for what they are now, and more for where they are coming from and where they are going. This is not unique to human socio-cultures since many non-human societies also culturally adapt, both in technology and social organization (Rensch, 1972). However, what seems to be unique about human society is that it has developed the capacity to take cultural adaptations and convert them into an evolutionary process. Human cultures evolve, rather than just adapt to circumstances. Here evolution is a distinct dynamic process, and is what Gell-Mann (1994) describes as a *complex adaptive system*: that is "a system [that] acquires information about its environment and its own interaction with that environment, identifying regularities in that information, condensing those regularities into a kind of 'schema' or model, and acting in the real world on the basis of that schema. In each case, there are various competing schemata, and the results of the action in the real world feedback to influence the competition among those schemata" (Gell-Mann, 1994: 17). This constitutes both a learning process for the system through feedback, and the generation of its own capacity to change over time - hence creating its dynamic. A socio-culture is not isolated from its environment, which acts to impose natural selection on schemata that limit which schemata might be successful.

An explanation for change in the complex socio-cultural system has been given by Sorokin (1937-42) through his *Principle of Immanent Change*. This tells how cultures change not just as a response to the external needs of human society, but through something that occurs within the process itself. This principle states that a durable social system changes by virtue of its own forces and properties, and it cannot help changing even if all external conditions are constant. A socio-cultural system satisfying this principle generates consequences which are "not the results of the external factors to the system, but the consequences of the existence of the system and of its activities. As such, they must be imputed to it, regardless of whether they are good or bad, desirable or not, intended or not by the system. One of the specific forms of this immanent generation of consequences is an incessant change of the system itself, this being due to its existence and activity" (Sorokin, 1942: Vol. 4, 600-1).

For Sorokin (1964) all social systems, whether they be the family, the State, universities, schools, churches, or any other, are reflections of complex systems of meanings (Gibson, 2000). Sorokin created a theory of socio-cultural change that explains how, through the domination of one of two cultural conditions, different patterns of cultural based behavior can develop. The two cultural conditions identified are referred to as *sensate* and *ideational* enantiomers (Yolles, Frieden and Kemp, 2008).

An enantiomer is one of a couple of entities that exist together within a given frame of reference, and the nature of one of the couple is a mirror image of the other. In a cultural frame of reference they are constituted as opposing and interactive sensate and ideational forces. Kemp (1997) explains that in a culture in which the sensate enantiomer dominates, meanings are only taken from the senses, this resulting in a predominantly utilitarian and materialistic society. Ideational culture relates to the supersensory, to the creation of ideas, and the highlighting of the humanitarian or spiritual. In an ideational culture the *creation* of ideas may predominate, and people with a predominantly ideational mind-set generate possibilities through the pursuit and maturation of a variety of ideas.

Communication is also important within socio-cultural settings and the way in which it operates through narrative. In this context, Gibson (2000) notes that ideational culture centers on metanarrative, sensate culture centers on Visualism[i] in which metanarratives[ii] collapse and fragment into antenarrative[iii], leading to a society without thought or judgment.

Returning to the ideational notion of spirit, Zetterberg (1997) notes that it is connected with Hegel's notion of *Zeitgeist*, and has been used mainly as a term to designate the "predominant ideas" of a period like "the spirit of romanticism," or "predominant structures" like the character of the era of constitutional monarchy or of industrialism. However, the definition of spirit, Zetterberg suggests, does not necessarily arise from its structures. Rather, we are told, the term "Zeitgeist values" can be taken as a loose designation of those values of a period that are not *cardinal* values. *Cardinal* values are sensate, represented by wealth, order, truth, the sacred, virtue, and beauty; these arise from Max Weber who spoke of seven *Lebensordnungen* (life-orders) and *Wertsphären* (value-spheres). They are constituted as the economic, political, intellectual (scientific), religious, familial, and erotic life-orders and spheres of life-activity and values, each with *Eigengesetzlichkeit* (internal, lawful autonomy).

Cultural dynamics arise because these cultural conditions maintain the interactive enantiomers. Jung[iv] uses a relative of this term, enantiodromia[v], to act as a principle in which the superabundance of any force will inevitably produce its opposite. He in particular used it to explore the dichotomous relationship between the unconscious and conscious mind, the

former acting against the wishes of the latter (Jung, 1989). This Jungian word is usefully explained by Wilson (1984: 1) when he tells us that:

> "When the imperatives of various life stages are not attended to, i.e., when particular calls for use of different kinds of energy are ignored, and the person continues to rely only on those functions and attitudes one can readily "handle," the commitment to growth stops and the drive to employ those new untapped energies is dammed up. If continued long enough, this can produce those dramatic mid-life upheavals we all know about: the disciplined, sensate Wall Street broker suddenly flips and is off to join the flower children in their grooving intuitive commune, etc. Jung had a wonderful Greek word for this phenomenon: enantiodromia, which says literally that "things run into their opposites" and actually means that if any of the energies that belong to the fullness of the humanum is blocked and has no acceptable outlet for any extended period of time, it will turn back on its host like a mighty tidal wave engulfing all that seemed to have been built so solidly. Such is the stuff of dramatic religious conversions - as well as the collapse of self in narcissistic anarchy. It is interesting that this is one concept that Jung did apply beyond the level of the individual self and its journey, but characteristically he applied it, not to the middle level of organizations and institutions, but rather to the macro-level of great world cultures and civilizations which skew the revelation of the humanum in one direction for centuries until the pendulum finally swings back with a vengeance. For purposes of our reflections here the questions would be: What is enantiodromia for a small legal firm or for the archdiocese of New York or St. Swithin's Prep? What are its advanced warning signals? How can its cataclysmic fallout be minimized as we harvest the gains it will bring for our richer understanding of what it means to be human?"

While the word enantiodromia refers to the shift in forces, Jung explains it through the notions of yin-yang in relation to the development of the mature and well-adjusted personality, where the various opposites are united through some middle path through what he called the *transcendent function*; it is through this function that the various opposing aspects of personality are united, particularly consciousness and unconsciousness, into a coherent middle ground. This function also creates guidelines for personal development that enable personalities to develop (Jung, 1971; Aveleira, 2004). So, yin and yang may be seen as dichotomous primal opposing interacting enantiomers. All change in the whole system that it produces can be explained by the interactive workings of yin and yang, as through their dialectic interaction they either produce or overcome one another (Du, Ai & Brugha, 2011). Since each of these enantiomer opposites produces the other, the production of yin from yang and yang from yin occurs cyclically and constantly so that no one principle continually dominates or determines the other. However, this cyclic symbiosis can be interrupted and overcome. The result of this interaction is that a mix between the two cultural conditions can result, and one of the culminations is what Sorokin refers to as a third cultural condition, the *Idealistic* - a balance between ideational and sensate cultural attributes. Set within the context of Western cultural development, during the early part of the industrial revolution society was seen to have developed this cultural mix.

Having introduced the Jungian use of enantiodromia and yin yang, it should be recognized that the distinction between them is significant. This can be seen from our modeling approach, where the former constitutes an ontological connection while the latter has an epistemic one. This is because the unconscious and conscious maintain different types of reality, while the different meanings that arise in the yin yang enantiomer poles arise with commitment to different forms of knowledge.

In order to understand the way in which yin yang enantiomers arise, we can model how a trait achieves its values that constitute personality types. This is shown in Figure 4 which illustrates the relationship between each enantiomer (adapted from Yolles, Fink & Frieden,

2010, 2012). Here, both yin and yang are seen as figurative schemata in interaction that occupy the figurative domain. They also constitute personality types that the agency may assign to itself. The result of this interaction is that a dominant enantiomer (personality type) emerges for the trait, and this that becomes operative thereby characterising the personality. The nature of the personality type that becomes operative for the trait may be subject to change from cultural and social influences internal to the agency.

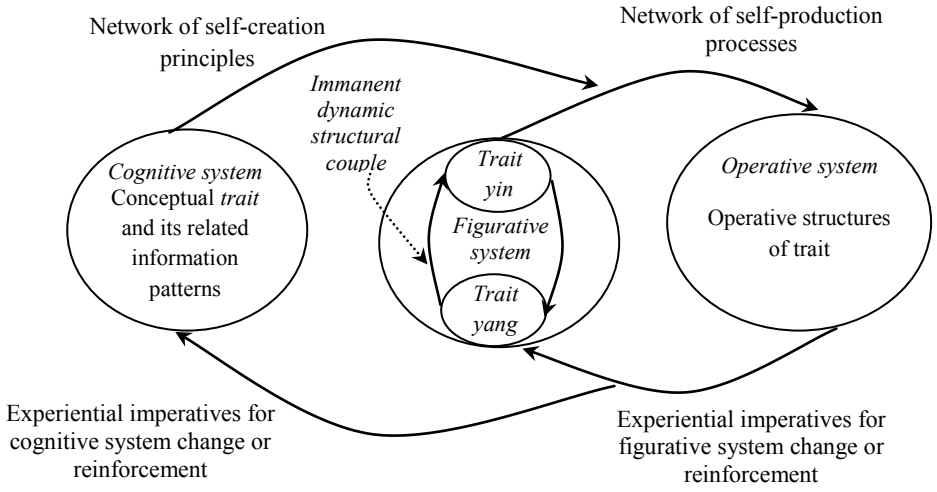


Figure 4: Representation of the interaction between enantiomers (personality types) of a trait

That the enantiomers are figuratively distinct draws us towards the recognition that they have an ontological origin. To appreciate this, it would be useful to understand the distinction between ontology and schema. Ontology is used to help us simplify analysis by breaking down what we see as a complex phenomenal reality into differentiable types of relatable reality, in comparison to epistemology which is the study of the sources, nature, and limits of knowledge (and by implication its relation to truth and meaning) associated with those realities. Ontology symbolically distinguishes between types of reality, concerns Being and the nature of reality, and the perceived structures (like objects and concepts) and their relationships. For Cocchiarella (1991) it is an argumented systematization about the nature of reality. Fonseca & Martin (2007) refer to ontology as *the general assumptions concerning the explanatory invariants of a domain* that provides a framework "enabling understanding and explanation" of experiences across all those domains for which explanation and understanding are required. Related to ontology are conceptual schemata, which *identify the relation between such general explanatory categories and the facts that exemplify them* in a particular domain. In other words, while ontology is connected with bounded representations of the real world, conceptual schemata embrace phenomenal entities that enable the formulation of exemplars. The consideration of such conceptual schemata may be insufficient, noting Schutz & Luckmann's (1974) recognition of three types of schemata: thematic, related to conceptual constructs; interpretative, when these constructs are directed; and motivational, form which action results (Yolles, 2006).

Returning to our considerations of yin and yang, in Figure 4 we distinguish between them as distinct phenomenally oriented interpretive schemata that constitute the extrema of a given trait. By the term *phenomenally oriented*, we mean that when a trait is assigned a dominant enantiomer, it becomes experientially operative, so that the interaction between the yin and yang schemata becomes subject to experiences that affects their interactive relationship. This is hence a property of schemata which distinguishes them from ontologies. As such, ontologies cannot be seen to be dynamic entities of a "living system," as can schemata, they can only have an influencing nature on the development of the schemata themselves. This

allows us to understand the distinction between Jung's enantiodromia and our enantiomers. It provides us with an insight into the different natures, in Jung's terms, of enantiodromia and yin and yang enantiomers.

The yin yang enantiomers exist for any ontology which has assigned to it a trait. In respect of the cultural domain of interest to Sorokin, cultural enantiomers are polar opposites of a primary cultural trait, and constitute cultural mentality types that dominate a given culture. So, when ideational cultural type mentalities interpret the world, they are idea-centered and tend to embrace the *creation* of ideas (Kemp, 1996). However, they are unable to apply the ideas created or the practical or material governing controls necessary to manifest them as behavioral aspects of the system. People with a predominantly ideational mind-set generate possibilities through the pursuit and maturation of a variety of ideas, though they tend not to know how to use them materially. They thus create variety, but they cannot harness and apply it. In contrast, sensate mentalities will be interested in or support practical and/or material matters relating to external events which are then sought to be integrated within the dominant one-world-view.

Zetterberg (1997), referring to Sorokin, illustrates how Western culture has oscillated between sensate and ideational dominant types. An ideational culture in 600 B.C. changed to a sensate culture at the height of the Roman Empire, which in turn became ideational in the Middle-Ages, after which it became senate again in more modern times. This shifting process has been illustrated by Zetterberg, who refers to Marshall McLuhan's historical study of changes in media technology, shown in Figure 5.

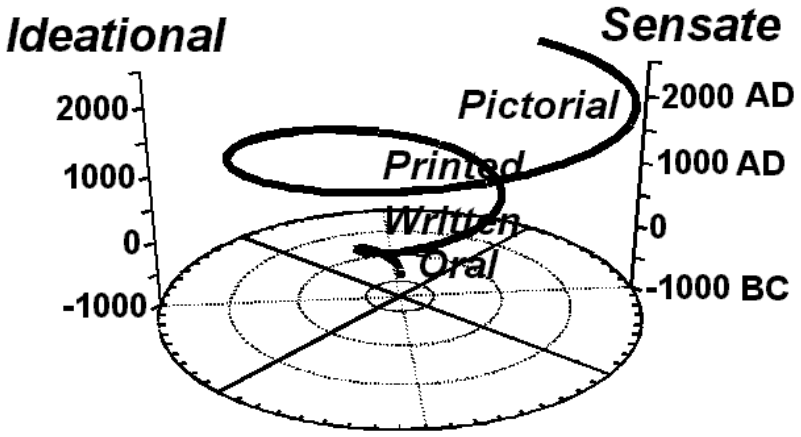


Figure 5: Ideational and Sensate Values and Media Technology (Zetterberg, 1997)

According to Davis (1963) in predominantly sensate cultures war, crime, and rising divorce rates are seen as phenomena inherent in an excessively sensate and materialistic culture. Such notions are reconsidered and elaborated on by Rummel (1975), who centers on Sorokin's view that extreme conflict is part of the process of rapidly changing social relationships. In particular Rummel identifies a number of propositions that relate to the development of internal and violent conflict as presented in Table 1.

Such conditions are well explained in theory on the dynamics of complex adaptive systems (e.g., Yolles, Fink and Sawagvudcharee, 2012; Manmuang, Yolles & Talabgaew, 2012,), something that is beyond the scope of this paper.

Characteristics of conflict	Nature
Disruption, violent conflict and power	Disruption occurs causing violence, when old dismembered social institutions are reconstructed much as they were before, but with a new elite and new justification; power, manifested through coercive violence, enters only during periods of transition.
Internal disturbances	There is no upward/downward tendency to internal disturbances, which simply fluctuates through time.
Type culture penchant towards conflict	Conflict occurs for societies with both (sensate/ideationa) cultural types, which are neither more nor less peaceful or belligerent.
Conflict with cultural instability	Wars and revolutions tend to increase during periods of transition from sensate to ideational culture and vice versa. The peak of internal disturbances occurs at periods of transition in social relations (at historical turning points). Conflict is a manifestation of rapid transition between different systems of organized relationships; as such, conflict and violence appear to be "permanently working forces, inherently connected with the essence of social life itself, which do not permit either a complete elimination or the unlimited growth of disturbances" (Sorokin, 1957:592). Manifest conflict is a resultant of this breakdown.
Conflict through value incongruence	Values or official and unofficial law-norms become incongruent, and disruption causes unrest and conflict; the idea of incipient or latent conflict groups or classes, of a situation or structure of conflict, is an implicit rather that explicit part of perspective. Disruption or breakdown occurs when there is an incongruence and incompatibility of values
Peace break-out with stability	The cause of intergroup and intragroup peace is a well-integrated system of values; the values must be in harmony and mutually compatible.

Table 1: Propositions for the development of Violent Conflict and War (Rummel, 1975)

Summarizing earlier considerations and extending Zetterberg's (1997) views on the nature of culture, it is possible to generate a set of characteristics that identifies and distinguishes between sensate and ideational cultural conditions, as shown in Table 2.

Type System	Cultural Concept (Agency)	Ideational	Sensate
Culture	Beliefs and meanings	Supersensory	Sensory
	Values	Humanist/spiritual/ Zeitgeist	Materialist/ Cardinal
	Value adherence	Fidelity	Pragmatism
	Life view/ knowledge imperative	Being	Becoming
Strategic Personality	Ethics	Unconditional morality	Happiness
	Ideology	Stability of tradition	Progress/modernity
	Needs	Internal	External
	Purposes	Humanist/spiritual development	Material exploitation
	Variety	Creating	Applying
Behavioral	Activities	Introverted	Extroverted
	Development/ control interests	Self	Technological/ instrumental

	Communication of stories	Metanarratives	Visualism
	Investigation	Conceptualization	Empiricism

Table 2: Relating and distinguishing the notions of Ideational and Sensate Cultural Orientations

3. Traits regulating cognitive, figurative, and operative orientation

Sagiv and Schwartz (2007: 177) state that "Organisations, like all open systems, must cope with two paramount universal challenges: adapting to the external environment and integrating their internal system (von Bertalanffy, 1968; Schein, 1985). Organizations have to adapt to the conditions in their environment (e.g., obtaining the human and material resources needed for their activities, deciding what to produce and how to do so, finding markets for their products). They must also concern themselves with internal integration (e.g., socializing organization members, managing relations among them and developing optimal decision-making processes). In response to these challenges, organizations develop, often unintentionally, the set of preferences that form their value culture." Based on these considerations Sagiv and Schwartz (2007) specify three bipolar dimensions of culture that represent alternate resolutions to each of three challenges that confront all societies: embeddedness vs. autonomy, mastery vs. harmony, hierarchy vs. egalitarianism.

Sagiv and Schwartz (2007) assume that "emphasis on the cultural orientation at one pole of a dimension typically accompanies a de-emphasis on the polar orientation with which *it tends to conflict*" (ibid, p 180, emphasis added). With respect to the ***cognitive orientation*** "embeddedness vs. autonomy", the perception of Sagiv and Schwartz (2007: 179) is that "embedded cultures emphasize maintaining the status quo and restraining actions or inclinations that might disrupt in-group solidarity or the traditional order. In autonomy cultures, people are viewed as autonomous, bounded entities who should find meaning in their own uniqueness and who are encouraged to express their internal attributes (preferences, traits, feelings and motives)."

In our attempt to re-interpret these findings of Sagiv and Schwartz (2007), we deviate from the perception that bi-polarity implies "conflict". In this fundamental aspect, our view of a system, be it an organization or a national economic system, is based on the central assumption that bi-polar traits (dimensions) are a ***necessary condition*** for the existence of a viable system. In comparison with significant management literature, we turn downside up and upside down. Eisenhardt (2000: 703) writes: "Paradox is the simultaneous existence of two inconsistent states … This duality of coexisting tensions creates an edge of chaos, not a bland halfway point between one extreme and the other." In the same Special Topic Forum of the Academy of Management Review, Lewis (2000:769) concedes that "managing paradoxical tensions denotes not compromise between flexibility and control, but awareness of their simultaneity. Exemplars offer both/and insights into organizational characteristics and performance, emphasizing the coexistence of authority and democracy, discipline and empowerment, and formalization and discretion."

Confirming the perceptions of Lewis (2007), but in contrast to the literature on paradox, our model is solidly based on the perceptions of Jung (1921, 1971) and Sorokin (1964), the former of which are strongly re-emphasized by (Blutner & Hochnadel 2010): the alternate pole of a bi-polar trait has an essential and indispensable auxiliary function for the existence

and survival of a system. In that sense, our model turns downside up: What numerous management scholars call 'a paradox' is the normal state, reflecting a necessary and indispensable constituting element of the organization as a viable system. In view of emerging pathologies in systems (Yolles, 2007) we find it 'paradox' that numerous management scholars find the characteristics of a pathologic organization to be the logic characteristics of the 'normal and desirable state' of an organization. In viable systems, the function of a system's intelligences is to manage the bi-polarity of traits and to attach the appropriate weight to the one or other pole without neglecting the mutually auxiliary function of the alternate (information) processes.

Turning to the literature on values, we note that Schwartz (1992) already had elaborated that certain pairs of cultural value orientations share compatible assumptions. Thus, in deviation from Sagiv and Schwartz (2007), we emphasize as a condition for the survival of an agency that the poles of bi-polar traits of an agency have a mutually supporting function. While there could be an 'at-first-sight' sense of contradiction between the ***cognitive orientations*** 'embeddedness' and autonomy, either extreme rather would be indicative of a pathologic agency (Yolles, 2007). This observation lays the ground of our perception of ***the cognitive orientation trait*** and the attached figurative intelligence. While, depending on context, there may be stronger or weaker emphasis on either poles of the bi-polar trait. "Contradiction" would be indicative of a lack of figurative intelligence, which either would rely only on already cumulated knowledge and would refuse to adopt new knowledge (exclusive embeddedness), or would not be able to create a coherent projection of future configurations and could not project coherent future action (full autonomy of all agents and lack of coherence).

In Figure 2, the ***figurative orientation trait*** refers to self-relational ethics and normative self-regulation. It helps to formulate goals. Sagiv and Schwartz (2007) see that in the context of the broader related societal challenge to regulate the relations of humankind to the natural and social world. The orientation called "mastery" encourages active self-assertion to attain group or personal goals and to master, direct and change the natural and social environment (values: ambition, success, daring, competence). The polar response, called "harmony", is trying to understand and appreciate rather than to direct or exploit. This orientation emphasizes the goals 'unity with nature', 'protecting the environment', and 'world at peace'.

Again, we would emphasize the supporting function between the two poles of the bi-polar trait. The harmony extreme 'no-change' ultimately would be as much disastrous for a society as the opposite, 'the winner takes it all'. Without aiming at some degree of mastery a society could not adapt new and efficient solutions, without considering resource constraints and the negative effects of blind resource depletion a society also hardly can survive.

The ***Operative orientation trait*** is related to the bi-polar dimension "hierarchy vs. egalitarianism" by Sagiv and Schwartz (2007). This bi-polar dimension has remarkable resemblance with the bi-polar dimensions "tight vs. loose control" and 'job vs. personality orientation" by Hofstede et al. 1990.

"People must engage in the productive work necessary to maintain society rather than withhold their efforts or compete destructively. They must coordinate with others to manage their unavoidable interdependencies. The polar solution labeled cultural hierarchy relies on hierarchical systems of ascribed roles to ensure productive behavior." (Sagiv and Schwartz 2007, 179). Through hierarchy, people are socialized to take the hierarchical distribution of roles for granted and to comply with the obligations and rules attached to their roles. In

hierarchical cultures, organizations are more likely to construct a chain of authority in which all are assigned well-defined roles. Members are expected to comply with role-obligations and to put the interests of the organization before their own. Hierarchy defines the unequal distribution of power, roles and resources as legitimate (values: social power, authority, humility, wealth).

The other pole is to ensure socially responsible behavior that preserves the social fabric. The polar alternative labeled cultural egalitarianism seeks to induce people to recognize one another as moral equals who share basic interests as human beings. People are socialized to internalize a commitment to co-operate and to feel concern for everyone's welfare. They are expected to act for others' benefit as a matter of choice (values: equality, social justice, responsibility, honesty). Egalitarian organizations are built on co-operative negotiation among employees and management (Sagiv & Schwartz, 2007, 180).

With respect to Environmental orientation ***Agency operative intelligence*** may be seen to emerge from that part of the operative system that is related to the external relation of the agency. Hofstede et al. (1990) had developed the trait ***"open vs. closed system"***, which reflects about the general attitude an agency is having towards other agencies in order to pursue its own interests. The term "closed system" can be related to the trait "introvert" in personality theory. The system relies strongly on its own "well proven" knowledge. "Open system" can be related to the trait "extrovert". The system puts strong emphasis on collection of information from others.

When extending this with respect to consideration of the relations of an agency with other agencies (as illustrated in Figure 1a) with which there might exist mutual or unilateral dependence, we refer to ***Behavioral intelligence***, which aims at finding common ground for joint (economic) success or rather following reasons for opportunistic or exploitive relations. In this context, we can refer to the trait ***"pragmatic culture vs. normative culture"*** by Hofstede et al.(1990), where the term 'pragmatic' also could be seen as palliative for openness to corruption. Earlier it was noted that behavioral intelligence, when set within a durable structured relationship between agencies (or an agency and its environment) is referred to as a structural coupling. This, according to Maturana and Varela (1987: 75), is constituted as a mutual engagement that creates a history of recurrent interactions that leads to the structural congruence between the systems, and it leads to a spatio-temporal coincidence between the changes that occur in the family of systems (Maturana, 1975: 321). Each system in the family reciprocally serves as source of perturbations for each other. These perturbations are 'compensable', meaning that: (a) there is a range of 'compensation' bounded by the limit beyond which each system ceases to be a functional whole; (b) iterations of the reciprocal interaction are affected by those iterations previous to it and their influencing trajectories (Varela, 1979: 48-49).

4. Considerations from the Agenda of Evolutionary Economics

In this section of the paper, in the context of the self-transformation of the economy we shall deal with system trajectories in terms of socio-economic processes. Apparently, existing theoretical approaches to scientifically tackle related issues are the theory of evolution in general, and generic approaches to economic evolution (Dopfer and Potts 2011, Metcalfe 1998, Witt 2003), in particular, but also theories of paradigm change (Kuhn 1970 [1962], Yolles et al. 2012). When in the following we shall refer to links between the writings of selected authors to trait characteristics, implied values and specific processes as they emerged

from our model in figure 3 we do not assume that the authors we refer to would have seen economic systems and emergent economic development through the same lenses as we do. We use these links to indicate that our meta-model of a socially viable system or parts of the model have the capacity to deal with similar issues.

In terms of Kuhn (1970 [1962]) and Lakatos (1978) in theory, experiment, and simulation the scientific or axiomatic core of mechanistic closed-system physics still dominates a broad range of scientific disciplines. By contrast, re-emphasis of the Darwinian legacy offers a fundamental paradigmatic switch from equilibrium and optimization thinking to dynamic process and diversity thinking. In the history of economic thought, economic theory has already delivered various evolutionary impulses in such a direction. However, many of these important impulses decayed due to the postulated superiority of *"decision theory ... as universal platform for the solution of all theoretical problems"* (Dopfer, 2012, 136-137).

As shown in the previous parts of this paper, it is rather complex to illustrate how viable systems emerge, monitor and maintain their value-systems and a related socio-economic structure through the dynamic interplay between micro-motives and macro-behavior. Schelling (1978) emphasizes that aggregate behavior is different from the summation of individual behaviors, what is also apparent for all kinds of economic activities. He advocates an agent-based theory of change, where the aggregation or accumulation process implies individual as well as social learning of heterogeneously operating agents. Thereby, learning emerges through a network of processes of collective information processing within and between groups, organizations or institutions. This is an issue, which is not addressed in standard textbook economic theory built on the assumption of rational economic choice of completely informed homogenous agents. The main problem, already addressed in the previous chapters, relates to the issue of cognition and its crucial role for the collaborative design of a system, and its figurative and operative elements.

Cognition is constrained by the locality of individual (and collective) information processing; it depends and is shaped by the local environment of an acting agent [cf. processes P4,1 and P4;2 in Figure 3]. Local constraints on knowledge are the reason for bounded rationality, prominently articulated in the work of Simon (1991, 1996). Simon sheds light on the interconnection of organizational evolution and the boundaries of reason. In his writings he creates a universe of the 'sciences of the artificial' by combining insights from cognitive psychology and artificial intelligence. Then organizations can be considered as distributed information systems with clear formal rules emerging from bounded rationality. Such an organization is characterized through bottom-up processes [reflected by P4,2 and P3,2 in Figure 3]. Therefore organizations are not to be seen as 'purpose-machines', because for a central core of the organization access to dispersed information is not effectively possible. The functioning of an organization, by means of its capacity to collectively process information, depends on the functioning of all its members (e.g. in operations and strategy formation) and their moral values. Hanappi (2008) offers a comparable evolutionary computational simulation perspective on the nature of dispersed knowledge.

Especially the early adopters of evolutionary economic thought have vindicated the perspective of a bottom-up evolving economy. With regard to the notion of the economy as a distributed information system, some of F.A. Hayek's (1945, 1973, 1978) contributions are highly relevant. Hayek's (1945) famous article *'on the use of knowledge in society'* highlights the complexity of economic action, building upon locally informed agents. Therefore, he conceives competition as a discovery process exploring the economic space, a process of information mining [P4,2 and P3,2 in Fig. 3]. The problem of knowledge is central in Hayek's

work and it led him to an evolutionary research program about the guidance and inheritance of systems of rules. Hayek was fascinated by the idea that information spreads like a virus on a network of connected nodes. His contagion mechanism was unfortunately not a very explicit theory of cultural evolution, dependent on imitation and adaptation of rules of conduct. Hayek (1973: 35-38) looks into the emergence of a coordinated order with respect to systems of rules of conduct. He thereby attacks the presumed role of rational choice for the coordination of order. In Hayek's terms, order is conceived as an organic social structure, i.e. an institution. His institutional theory focuses on the origination process of an institution, which Hayek explains along the idea of spontaneity. The interpretation of spontaneous order is connected to the guidance of rules of conduct, of which individual agents are not totally aware of [cf. P1,1 in Figure 3].

> What I want to show is that men are in their conduct never guided exclusively by their understanding of the causal connections between particular known means and certain desired ends, but always also by rules of conduct of which they are rarely aware, which they certainly have not consciously invented, and that to discern the function and significance of this is a difficult and only partially achieved task of scientific effort. Hayek (1978: 6-7)

The idea of the constructive tension between 'hierarchy vs. egalitarianism' of the operative orientation trait [Fig 3], is closely related to Hayek's idea of spontaneous order, which builds upon an evolutionary process of trial and error and an experimental testing of innate rules. These rules create knowledge, which is culturally transmitted via institutional carrier systems [cf. P2,2 in Figure 3]. Hayek's (1973: 35-55) distinction between *cosmos* and *taxis* reveals his distinction between institution and organisation. In this respect, Hayek also switches from 'purpose' to 'function'. By that he means in particular that an order does not necessitate specific purposeful action of all the involved agents, nevertheless the order may establish some purpose endogenously; as a kind of function [compare figurative intelligence in Figure 3]. Hayek makes a crucial point on the rules of organization:

> To some extent an organization must rely also on rules and not only on specific commands. The reason here is the same as that which makes it necessary for a spontaneous order to rely solely on rules: namely that by guiding the actions of individuals by rules rather than specific commands it is possible to make use of knowledge which nobody possesses as a whole. Every organization in which the members are not mere tools of the organizer will determine by commands only the function to be performed by each member, the purposes to be achieved, and certain general aspects of the methods to be employed, and will leave the detail to be decided by the individuals on the basis of their respective knowledge and skills. (Hayek, 1973: 48-49).

The architecture of hierarchies (Simon, 1962) then is significant for the information and knowledge flow within an organization. This notion allows one to combine several important issues raised in the work of H. Simon and F.A. Hayek. Spontaneity becomes a matter of singularity within an individual context, where it may be necessary to deviate from certain rules. [Compare the constructive tension between 'hierarchy vs. egalitarianism' or 'strong vs. loose control'].

The issue at stake can be developed further through the question: Why should there even be an organization? J.A. Schumpeter (1997 [1911]) answers this question by referring to the will of an economic agent to change something particular, to be successful and engage in an innovative process [figurative intelligence]. Certainly Schumpeter's agent does not belong to the herd of rational sheep; on the contrary, the entrepreneur takes risk under uncertainty. Hence, from a theoretical point of view it is of utmost importance to analyse the foundations of economic decision making under uncertainty. Schumpeter built upon methodological individualism in a heterogeneous way [compare 'intellectual autonomy vs. embeddedness']. In this perspective, innovative economic activities can be done only by distinct or even

extravagant personalities, who differentiate themselves from the mass and are not strongly embedded. His conception of methodological individualism is in several ways different from the standard neoclassical notion. Schumpeter focuses on certain personalities who are able to change something real in the economy, because of ambitious dedication. The entrepreneur's incentives emerge out of something irrational and success becomes a matter of variety, diversity and clever selection of potential combinations [compare 'mastery vs. harmony]. These characteristics are not easy to learn, moreover they are related to an innate talent or skill of the entrepreneur to act as a disturbing force of creative destruction [cf. also Metcalfe (1998) for an evolutionary interpretation of creative destruction]. Schumpeter (1911, 1928) mentions several times - mostly in his writings on the entrepreneur - that a theory of entrepreneurship has to deal with leadership [cf. figurative intelligence, P2,1 in Fig. 3].

Leadership is a very ambiguous, complex issue by itself. It is about *will* and *perseverance,* and 'leadership values' by themselves are also culture dependent. Here we only briefly can refer to the project GLOBE (Chokkar et al., 2007; House et al., 1999). Especially in situations of uncertainty it is tough to push decisions to actions as an entrepreneur, because the followers expect a specific leadership behaviour, which is different across countries.

Furthermore, entrepreneurship also reveals its complexity in the governance of an organization [operative intelligence, P3,1 in Fig. 3], for instance with regard to conflicts at work. Schumpeter (1997 [1911]: 100ff.) addressed the challenges of an economic leader – the *enforcement of new combinations* – as summarised by Leube (1996: 168), and translated by the authors. Comparison with the original text is recommended:

(1) Die Erzeugung und Durchsetzung neuer Produkte oder neuer Qualitäten von Produkten.
The creation and enforcement of new products or new qualities of products. [P3,1 in Fig. 3]
(2) Die Einführung neuer Produktionsmethoden.
The introduction of new methods of production. [P2,1 in Fig. 3]
(3) Die Schaffung neuer Organisationen der Industrie (Vertrustung z.B.).
The creation of new industrial organisation [P1,1 in Fig. 3]
(4) Die Erschließung neuer Absatzmärkte.
The disclosure of new sales markets [P4,1 in Fig. 3]
(5) Die Erschließung neuer Bezugsquellen.
The disclosure of new sources of supply. [P4,2 in Fig. 3]
[summarised by Leube (1996: 168), translated by the authors].

Schumpeter considered himself to be one of these vital, energetic, dynamic, economic leaders, capable of changing the economic environment. In order to succeed as an entrepreneur and to reshape the economy it is necessary to create something novel, to break with routines and to go beyond rules of conduct. *"... uns vom Diktat der Routine zu befreien."* (Schumpeter, 1997 [1911]: 100ff.). What means *'to free ourselves from the dictate of routine'*. Schumpeter's conception of the entrepreneur is deeply connected to the vision of powerful liberal men, willing to break with habits and tradition. The entrepreneur is not much embedded, but rather intellectually autonomous. But, how can this vision succeed in an organisational context, how may an organizational leader create appropriate organisational circumstances? Loasby (1984) argues in line with Schumpeter, that innovations driven by Schumpeterian entrepreneurs are successful with newly-created enterprises. Thereby, economic change is also driven by a change in the productive methods or means of organisation [figurative intelligence]. In this respect all five "rules" (as stated above) need to be met for successful innovation. Organisational leaders have to be innovative in social and cultural matters as well, in order to prevail in economic terms [intellectually autonomous, culturally not strongly embedded]. Culture *and* technology sustain the vital environment for certain economic traits and organizational concepts. The long waves of economic evolution, shaped by the most dominant

innovations, give rise to an economic *Zeitgeist*. An example for such a self-transformation of the economy is provided by the transmission from industrial to financial capitalism in the last century.

Th. Veblen (2009 [1904]) has foreseen some of the crucial developments of our times. In *The Theory of Business Enterprise*, he anticipates that economic motives turn from industrial real-economy interests more and more to pecuniary interests. Years earlier, Veblen (2009 [1899]) investigated into the role of conspicuous consumption driving pecuniary interests and status-seeking, an ultimate expression of a purely sensate culture. For the business perspective, these new motives entirely change the purpose and the structure of an enterprise. We may argue what Veblen observed is that 'mastery' has become an important value, in contrast to social harmony, compare also Tang (2010: 7ff) for a categorisation of the bedrock paradigms of the social sciences. Veblen thought that technological progress tremendously shapes habits of thought and consequently culture by the increasing use of machines as productive slaves. Hence, he argues that the role of *the machine process* has to be observed very critically. Since machine processes belong to the operative domain, we have modelled this influence through the network of processes P4,2 and P1,2. Veblen (2009 [1914]) builds his theory on a naturally selected instinct of human beings, which drives creativity and productivity. This instinct significantly influences technological change and economic growth on the macro level, due to cumulative effects. Hodgson (2004) remarks that the notion of an '*instinct for workmanship'* is very closely related to "*... the alleged dichotomy of pecuniary and industrial motives*" Hodgson (2004: 195 ff.). Veblen's emphasis on the instinct of workmanship needs to be regarded as a critique to the neo-classical assumption, that economic agents are conceived as *labour-averse* or *averse to useful efforts*, i.e. a *hedonistic* or *sensate* interpretation of economic motivation. Veblen was suspicious whether this assumption may fit into the greater picture of human evolution at all.

> If such an aversion to useful effort is an integral part of human nature, then the trail of the Edenic serpent should be plain to all men, for this is a unique distinction of the human species. A consistent aversion to whatever activity goes to maintain the life of the species is assuredly found in no other species of animal. Under the selective process through which species are held to have emerged and gained their stability there is no chance for the survival of a species gifted with such an aversion to the furtherance of its own life process. If man alone is an exception from the selective norm, then the alien propensity in question must have been intruded into his make-up by some malevolent deus ex machina. Veblen (1898-99: 187)

In this respect it is misleading to believe that something like labour represents an inherent aversion, due to the following reasons. On the one hand, the instinct of workmanship initialized the emergence of human beings out of primates and, on the other hand, generated the potential for a continuously growing population of the human species through the development of language and culture over thousands of years. Labour and its division, in the sense of creative collective production, is a necessary condition for the survival of mankind. Hence, why should human beings have built a consistent aversion towards labour over time? Veblen's argument works rather contrary, as Hodgson (2004: 195) ads.

> In contrast, hundreds of thousands of years of human evolution must have led to the selection of some propensity to engage in work that was useful for survival. This is the basis of his idea of an 'instinct of workmanship' (Hodgson, 2004: 196).

This argument above is at the core of P1,1 in figure 3. Here it is important to note that for sake of parsimony we did not explicitly model the internal processes and structural couplings within the environment at large and their effect on the environment culture.

It may be argued that aversion against poorly paid work for the advantage of capital owners

originated in modern capitalism, in the course of industrial revolution, where capitalism was sequentially subsumed within a money economy and incomes were extremely unequally distributed. But, even in a capitalist system with mere *pecuniary* interests something real has to get produced, something *industrial*. This is the point where the machines re-appear in the argument. Nevertheless the money economy generated new habits and new modes of economic motivation, such as profit-seeking production or conspicuous consumption, both themes are central to Veblen's work (Veblen, 1899). The emerging 'Veblenian' dichotomy between pecuniary and industrial interests also reflects his strict societal separation in the business and the industry system, making money or crafting goods. To Veblen this is the reason why capitalism can't work in the long run. He anticipated certain habituated economic traits as major threats for an equal distribution of wealth [cf. mastery vs. harmony]. Veblen also argues that the notion of pecuniary incentives has to emerge out of the selection process of capitalism and somehow undermines its own capitalist foundations, i.e. industrial production.

> As well as the obvious parallel here with Marx's position, note also the similarity with Schumpeter's (1942) claim that a contractarian system undermines its necessary culture of devoted service, and K. Polanyi's (1944) similar proposition that markets are corrosive of the social fabric. (Hodgson, 2004: 197).

All these arguments see the constructive tension between mastery and harmony. Too much of mastery undermines the constructive forces of industrial production. If rules become too tight, as in a command economy or a contractarian system, workers may not deliver devoted service, i.e. productive work. However, too much of harmony undermines the innovativeness of an economy; cf. Peneder (2012) for the inverted U-shape relation between competition and innovation. Veblen emphasised that capitalism tends to select pecuniary interests over productive interests. In the global financial crisis today, we are able to perceive the outcomes of this process. The idea of the instinct of workmanship can be expanded to notions of social coercive power, as Hodgson (2004: 199f) argues. In an evolutionary context, the selection criterion between pecuniary and industrial interests works at the society level and not at the level of individual instinct. Therefore, in an emerging institutional context a minimum degree of social harmony is required. Hodgson therefore suggests replacing Veblen's construct 'instinct of workmanship' by the concept of an 'institutionalised propensity to provision for human needs'. The terminology of propensity is far more general and is able to explain the origins of human survival through productive efforts. 'Institutionalised' can imply that there were individual instincts in the beginning, but then cultural innovations like division of labour or other organizational routine-based principles compensate individuals in certain ways. [cf. the mode of functioning of P1,1; P2,1; P3,1, and self-referential ethics in particular, Fig. 3] Such a broader perspective of 'institutionalised propensity to provision for human needs' can integrate the role of pecuniary interests from a real economy perspective. Namely, pecuniary interests drive for innovation, what is again a part of the Schumpeterian story – however, to consolidate the social fabric innovators need to sacrifice some of their gains from mastery to maintain social harmony.

Veblen's system of *'cumulative sequential causation of habits of thought'*, understood as a heuristic conception for economic evolution, brings us back to the primary claim for a bottom-up enrichment of a *'living economy'*. In order to integrate the different evolutionary positions of Hayek, Schumpeter and Veblen, we - the authors - are confronted with a challenge to conceive and analyse them in their complementarity. Veblen's focus lies on cultural regularities preserving certain habits or patterns of economic operations and institutions [aspects of social harmony in interaction with mastery]. Whereas Schumpeter offers a theory of singularity of dramatic economic change, based upon the innovative entrepreneur inducing the business cycle [aspects of intellectual autonomy emerging out of

embeddedness, freedom at large, open systems with loose rule obedience]. Hayek reveals perspectives on the spontaneous formation of order by innate guidance of rules of conduct in a heterogeneous economic population of agents [the productive tension between rules and deviation from rules when perceived appropriate by a dedicated worker, 'tight vs. loose control', and 'normative vs. pragmatic culture'].

The three streams of thought by Hayek, Schumpeter, and Veblen signal the importance of events, time and history for economic theory. In his book on *'How economics forgot history',* Hodgson (2001) critically asserts that it is a fundamental issue to integrate historical specificities into a general economic theory. Neoclassical economics dodges the related problems with two major 'parsimonious' assumptions: (1) economic value is a strictly subjective matter and (2) economic agents are acting under rational choice and perfect information. Assuming homogeneity, consequently all agents can be subsumed by a 'representative agent'. These assumptions permit *'analytic optimisation under constraints'*, in both, micro- and macroeconomics. For sure, the remaining analytical problems are not simple and render a variety of policy implications to be discussed. Nevertheless, discounting of time becomes most dominant. Discounting time effects cancels down presence and past of an economic operation. Future, more clearly said, assumptions about the future are turned into a new 'presence', what implies that for economic decision and choice a specific historical context is at best a secondary criterion.

It is worth noting that this aspect was not always dominant in economic theory as we have seen by discussing Hayek, Schumpeter and Veblen and as many historians of economic thought outline, compare for instance Screpanti and Zamagni (2005: 163ff) or Milonakis and Fine (2008: 71ff). These contributions, on the one hand, give an excellent overview of the intellectual development of systems of economic thought over the past 200 years and, on the other hand, highlight the transitional phase from classical political economy to economics, which marks a critical turn in economic theory. It is exactly this turn where *'historicity'* lost in favour of *'parsimonious'* analytical elegance. This did not happen without debate. Two economic *'schools'* opposed this process: The German *'historical school'* with Gustav von Schmoller as the central figure, and *'American Institutionalism'* with Thorstein Veblen. At the end of the 19th century, Schmoller was deeply involved in debates with the Austrian Carl Menger. In history of economic thought, Menger later was associated with the so-called '*marginalist revolution'* in economics (with other protagonists such as Léon Walras and William Stanley Jevons). The debates between Menger and Schmoller got prominent as the *Methodenstreit der Nationalökonomie*.

From our perspective, considering the given analytical implications the main problem of a subjective theory of economic value is the ignorance of historical events and neglect of specificities, which play an important role in economic change and organizational/institutional evolution. By contrast, only an event-based economic theory can address the issue of contingency and emergence for the path-dependent evolution of economic agents. For instance, in Figure 2 the model of the strategic economic agency accounts for the historical dimension by defining an agency as a complex evolving system itself, describing it with three fundamental systems: cognitive, figurative and operative system. The dynamic interplay between these systems as well as the dynamic interaction of the agency with the cultural and social environment (see Figure 3) characterize the historical event-based process of an organizational collective personality, which ultimately is driven by socio-psychological factors.

For a definition of generic features or properties that a historical theory needs to meet we can

refer to Dopfer (2005:16):

> Evolutionary theory is principally a historical theory. By a historical [economic] theory we mean one that makes theoretical statements about the historicity of economic phenomena. A historical theory differs from historical analysis in that it generalizes and, unlike historical analysis, does not attempt to provide an exhaustive account of all details of a time- or space-specific singular case. During the process of generalization a historic theory employs criteria such as irreversibility, non-ergodicity, non-repeatability, non-periodicity or path-dependence.

Beyond these criteria the theory needs to be conceived within a monistic ontology of socio-economic systems, a notion also addressed by Hayek, Schumpeter and Veblen. Witt (2008) provides an overview of the ontology of different economic conceptions and their corresponding heuristic twists. A monistic ontology assumes a bimodal approach to matter and energy, nature and nurture, actualisation and idea, and not a separatistic and dualistic approach. The criterion of bimodality is historical per se, because all economic processes evolve through *structure and agency*. Bimodality suggests that any existence is never associated with a 'pure form', what means that there is neither pure matter nor pure energy.

Dopfer (2005: 205) further explains that in an evolutionary monistic ontology – he refers to *'evolutionary realism'* – the basic economic categories are ideas and their actualisations. Every (sensate) actualisation has an ideational component, related to a specific historically grown network of agencies. Every idea emerges from a specific set of past actualisations, as we have addressed several times above. For analytical reasons, Dopfer and Potts (2008) argue that it is necessary to introduce the notion of a *'rule'*, as an analytical equivalent to the semantic ontological terminology of an *'idea'*, which can be defined as *"The ontological form of all generic existence"* (Dopfer and Potts, 2008: 102). Then, a *'rule'* is explained as *"a deductive procedure for operations. What the generic economic system is made of and what changes with economic evolution."* (Dopfer and Potts, 2008: 104). Thereby these authors distinguish between a generic and an operative layer of economic change, where the first layer is associated with the evolving knowledge base of the economy and the second with all operations built on this knowledge.

5. Discussion and Conclusion

We have highlighted the notion that the traditional economic paradigm is not adequate, and there has been supporting evidence of this from a number of areas. To do this, we have adopted cybernetic agency theory to create a meta-model, capable of generating specific models under given contexts. This has drawn on a variety of diverse theories, and there is substantial difficulty in connecting the technically distinct theories that arise because their terms of reference are from being immediately relatable.

In attempting to create synergies across different theories from different disciplines that exist in separate paradigms, this paper attempts to cross paradigms and create a more holistic synergy that is capable of representing diverse but implicitly related conceptualizations to each other. Each set of conceptualizations arises from its own paradigm, and each of these is created through cognitive models that involve beliefs, values, attitudes, norms, ideology, meanings, and define mission. They use concepts that form extensions that are logically and analytically distinct. There are some, who suggest that creating synergies across paradigms is not possible, since the difference between paradigms requires that they cannot be legitimately compared or coordinated (Midgley, 1995; Burrell and Morgan, 1979), thus they are incommensurable. Something that is commensurable can be described as being (a)

coextensive, (b) qualitatively similar. Even if two paradigms are coextensive, they are incommensurable if their concepts cannot be measured on the same scale of values, what applies if they are qualitatively dissimilar. Now, paradigms are generators of knowledge that derive from the propositions that make them up. Associated with each paradigm is a set of knowledge, and a consequence of paradigm incommensurability is therefore that the sets of knowledge that occur across two paradigms can in some way and to some degree be contradictory. One way of addressing the paradigm incommensurability argument is to create new virtual paradigms that define a cognitive basis for the integrated or coincident use of more than one method (Yolles, 1999). This will clearly require some level of understanding of the paradigms that are to be associated within the virtual paradigm, and an ability to demonstrate that they can be connected in a satisfactory way. In this respect it is not an arbitrary process.

That an inquirer is creating a virtual paradigm is not always clear, and one way of noting that this is happening is to examine the language that is being used. New language is indicative that a new paradigm is being formulated. Paradigms may be incommensurable, but "new paradigms are born from old ones" (Kuhn, 1970: 149). New paradigms occur through a process of transition from competing incommensurable propositions, standards, norms, tools and techniques. This means that these elements can be in conflict across different paradigms, particularly when differences in language force misunderstanding. Changes in paradigms occur with a "transition between competing incommensurables; the transition between paradigms cannot be made a step at a time, forced by logic and neutral experience. Like the gestalt switch, it must occur all at once (though not necessarily in an instant) or not at all" (ibid., p150). When new paradigms are born, it is because stakeholder belief develops that the old paradigms do not adequately explain the empirically examined situations. If a critical mass of stakeholders finds themselves in this position, then a shift to a new paradigm will occur that can explain the situations. Put another way, paradigm shifts occur when a paradigm moves into a region of instability, because a divergence occurs between its ability to explain reality and the events that we perceive to occur in reality. Normally, the divergence is seen as the development of paradox or contradiction. Partly then our changing perceptions are responsible for the paradigm shifts that are partly responsible for our changing perceptions.

If it is possible to formally compare or coordinate two paradigms, then it cannot be done from inside either paradigm unless they converge to a single paradigm (Yolles, 1996). To be able to do so, we must use a new paradigm that is capable of generating a new language that subsumes the others. However, such a paradigm may not exist except in the conceptual eye of an inquirer wishing to undertake a comparative or coordinating approach. However, a paradigm is a group affair that requires norms and formalisms that are visible to others who are not view-holders. We may therefore talk not of a new paradigm, but rather of a new virtual paradigm which, if it becomes accepted, establishes itself as a new paradigm. A virtual paradigm becomes established when there is a reasoned set of propositions (with related epistemology and logic) that provide it with some formality, and a weltanschauung that enables a relative paradigmatic view of a situation to occur. In this way a virtual paradigm is a formalized weltanschauung. The virtual paradigm may become a new paradigm under: (a) the necessary condition that its coherent beliefs and conceptualizations are adopted by a group, and (b) there are sufficient conditions for that group to become a critical size, whatever that may be.

In this paper we have moved down the route of creating a virtual paradigm. While its base theory is well accepted outside the area of economics, venturing into the field of economics clearly makes it a virtual paradigm there. We show that it is possible to develop a meta-model that has the capacity to integrate a certain class of theories of economic development with a certain class of theories and findings about national or global value systems that regulate the

coherence of societies. The model was derived from the social viable systems model (Yolles, 2006) and extended with insights from personality and agency theory. The resulting elaborated agency theory that we have shown here offers insights into the relationship between cultural attributes of a society, its social and political orientations, and its economic policies and conduct.

We have shown, therefore, that in developing an agency meta-model through some form of quick footed osmosis, one can absorb principles from different fields of study and establish an immediately relatable basis from which specific models can be generated. The need now is to seek particular contexts that the meta-model can respond to, and hence to generate economic models that are of core interest to the field of economics. The *raison d'etre* for this is not to tickle the fancy of those who might have such an interest, but rather to make the field of economics more related to the human activity systems that it serves and to create explicit awareness that distinct and mutually conditioning values are related to existing economic models.

Based on cybernetic social viable systems theory the meta-model of a socio-economic agency firstly attempts to establish links between some selected theories of economic thought and selected value studies that were undertaken in global, national and organizational contexts. Deliberately we chose a few exemplars from the class of early evolutionary economists whose main concern was general economic development, J. Schumpeter (1911), F.A. Hayek (1948), H. Simon (1962), and Th. Veblen (1898) and a few exemplars from value studies: Sorokin (1937-42), Sagiv & Schwartz (2007), and Hofstede et al. (1990).

F.A. Hayek and H. Simon contributed seminal thought about rules and necessary deviation from rules, with regards to distributed information. Veblen can also be seen as one of the most important early thinkers of socio-economic systems in cybernetic terms. His concept of "sequential cumulative causation" implies a system of interactive forward and feedback linkages. He discussed the economic processes of production and consumption in the context of reproduction of institutions, values and beliefs, and contextual behavior.

One core message of Schumpeterian Economics is about the importance of intellectual autonomy for innovation. Nevertheless, we hasten to add, that Schumpeter (2005 [1942]) was also concerned about harmony in a society; consider for instance his emphasis on economics studying the social unity, cf. Shionoya (2009: 7ff.).

Limits of this research are manifold:

1) The social viable systems model does not offer any new insights about the individual economic thinkers. However, we can show that it is possible to create a coherent meta-theory of an economic system that has the capacity to integrate some of their work into one model. The model also can offer links to several classes of value theories, most notably to those value theories, which are clearly based on the perception of constructive tensions between alternate poles of value dimensions, and which can be empirically identified or its perceptions can be measured.
2) Thus, the same exercise could be undertaken for numerous different classes of economic theory.
3) For any economist or management scientist it is likely possible to identify other important economic thinkers, who had contributed to the development of the science in a certain ideological framework and had great influence.

In the context of *'Mastery vs. Harmony'*, for strong emphasis on '*mastery'* we can refer to Milton Friedman (1970), who had written: "The Social Responsibility of Business is to Increase its Profits". For a view on *'harmony'* we may refer to Cyert & March (1963), who in their Behavioral Theory of the Firm had emphasized that "satisficing" behavior is most appropriate, i.e. coherent consideration of goals of all stake holders of organization is needed, which are to be satisfied to a certain extent, at least. Similarly in German tradition there was E. Heinen (1976) and a few others who interpreted the firm as a goal system, with a clear reflection of the interest of different stakeholders within and outside the organization. Decisions oriented towards a well specified goal system also contain some reflection about *'harmony'*, with emphasis that a decision theory of the firm has to consider the rank order of goals. This view was challenged by Günter Wöhe (1978[1965]) who similar to Friedman claimed that the only goal of the firm is to maximize profits, i.e. yet another example of a strong preference for *'mastery'* and achievement.

So, it is clear that we are proposing a new paradigm that is capable of synergy between diverse theories that have previously been unconnected, but which require connection in the chaos that we see that has arisen by not relating economic processes to the social human activity that enables economic processes to exist in the first place.

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[i] Visualism is an epistemological bias toward vision, which in particular is predominant in postmodernism.
[ii] In critical theory, a metanarrative is a globalising or totalising cultural narrative schema which orders and explains knowledge and experience.

[iii] Antenarrative is a pre-narrative, and a bet (ante) that an antenarrative that will become a living story that is world-changing. It is a bet that a narrative will change the extant hegemonic narrative. An antenarrative is a proto-story that is not yet, a before narrative. (Boje 2011).

[iv] In a letter on 3rd may 1939 that discusses *Psychological Types*

[v]The simpler term enantiomer (also enantiomorph that in particular relates to form or structure) means a mirror image of something, an opposite reflection. This 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 enantiodromiais also a key Jungian concept used in his notions about consciousness (e.g., http://www.endless-knot.us/feature.html), and (from the Oxford English Dictionary Online) it is the process by which something becomes its opposite, and the subsequent interaction of the two: applied especially to the adoption by an individual or by a community, etc., of a set of beliefs, etc., opposite to those held at an earlier stage. For Jung the word enantiodromiarepresents 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.