Distribution networks as a culture of collaboration

Sid Lowe
Lorraine Watkins-Mathys
Kingston University

ABSTRACT

Culture is an emergent property of human systems. It differentiates humans from other animals because it describes how humans 'make themselves' through symbolism. Humans, unlike other creatures, create complex identities through symbols, knowledge, information and communication or 'discourse'. Culture enables humans to construct a reality for themselves and, as such, humans prescribe their environment, their 'self ' and others through symbolism. Culture, therefore is suitably conceived of as a network of ideas. Understanding of these ideas requires emphasis upon their pattern (or form) of their organisation, which involves the qualitative configuration of relationships of ideas. These relational patterns are non-material and non-physical processes, and therefore, not appropriate for structural analysis.
Culture and networks are, consequently, coalescent constructs. They both concern non-physical organisation. Culture is a human network of ideas and human networks are cultural because they prescribe their own existence through symbolic ideas. Both constructs require an epistemic consciousness wherein epistemology has no essential, structural foundations. Network thinking or vernetztes Denken recognises that reality and our descriptions of it are a network of relationships. Objective understanding is, therefore, a fallacy because we cannot abstractly separate from this reality and our description of it because we are a part of it and it is a part of us. However, both network and cultural theory have been inclined to avoid this necessary ontological nominalism. They have been inclined to adopt the foundationalist premises of scientism in, consciously or not, often accepting the validity of nomotheic variance modelling and positivist epistemology. This paper outlines a subjectivist alternative, which promises to treat networks and culture as unreal inventions of human imagination. The implications for research in applying an 'epistemic consciousness' approach are outlined.

INTRODUCTION

Fritjof Capra regards "networks as the general pattern of life" (Capra 1996:153). In other words networks are the organisational form of all living systems. Central to Capra's (1996) thesis is a non-mechanistic, post-Cartesian and 'cultural' conception of living systems that requires a postmodern understanding of networks. This is absent from most business-to-business research, which is predominantly modernist in nature (Gómez Arias and Acebrón, 2001). This paper argues that network theory needs to adopt a postmodern conception, which takes culture seriously.

CAPRA'S THESIS

Capra (1996) proposes that we must understand three different but interdependent and inseparable criteria to develop a comprehensive description of living systems. These systems differ from non-living systems in that they are characterised by a network pattern of organisation. Networks are living because they are autopoietic, with internal non-linear communicative feedback enabling self-regulation, self-organisation and, therefore, adaptive development through learning. Network patterns enable 'self making' involving components of the system producing and transforming each other whilst maintaining the circular integrity of the system. Capra proposes " to understand autopoiesis, as defined by Maturana and Varela, as the pattern of life (i.e. the pattern of organization of living systems); dissipative structures, as defined by Prigonine, as the structure of living systems; and cognition, as defined initially by Gregory Bateson and more fully by Maturana and Varela, as the process of life" (Capra 1996:156).

The three inseparable criteria for understanding complex, living systems are pattern, process and structure. Cartesian science emphasises structure and has largely ignored pattern and process. An adoption of all three criteria, as equally important, results in a conception of structure that reveals the mechanistic, foundational certainties of Cartesian science as deluded and their analytical methods as contrived. Structure, in Capra's (1996) view, is merely a manifestation of the 'process' of embodiment of the 'pattern' of organisation of a system. As a result, 'structure' is not 'real' as such, because it is always a *reification* of process and pattern.

Living structures, which are self-organising are 'dissipative' and are structurally open to flows of energy and matter but organisationally closed. They are self-organising in that order and behaviour are established internally and not imposed by the environment. Such living structures are paradoxically, therefore, characterised by the coexistence of structural change and organisational stability. Contrary to mechanistic, Newtonian perception of time as linear, determinate and reversible, they are subject to the 'arrow of time' and are indeterminate and irreversible. Living systems are characterised by non-equilibrium and nonlinearity. As they fluctuate further away from equilibrium, they reach a 'bifurcation point' of instability, where feedback communication produces newly emerging forms of order, evolution and development (Capra 1996:167).

A living system is an integrated and interdependent whole of interconnected parts. Networks are the basic metaphor used to describe complex, living systems. Such systems are hierarchical in that they are networks within networks of higher complexity. They have emergent properties in that they are more than the sum of their parts. Emergent properties are a consequence of complexity in that any network system is a product of the relationship between its parts (which are themselves networks of lower complexity). Understanding of these systems requires emphasis upon mapping their pattern (or form) of organisation, which involves the qualitative configuration of relationships. Pattern is the configuration of relationships that gives a system its essential characteristics (Capra 1996:167). Living systems are commonly characterised by an autopoietic or 'self-making' network pattern of organisation. Relational patterns in living systems are dynamic non-material and non-physical processes rather than a static, mechanistic set of relations between components. They, therefore, are not conducive to structural, deductive and reductionist analysis because they are only understandable through holistic mapping.

Process is Capra's (1996) third criterion of a living system. Process is the activity involved in a continual embodiment of the system's pattern of organisation (Capra 1996:156). In living systems pattern is always embodied in structure and the "link between pattern and structure lies in the process of continual embodiment" (Capra 1996:156). Process, consequently, is what translates a nominal pattern into a reified structure. Autopoiesis or the pattern of organization of living systems "is a set of relationships between *processes* of production; and a dissipative structure can only be understood in terms of metabolic and developmental *processes*. The process dimension is thus implicit both in the pattern and the structure criterion" (Capra 1996:167).

In living systems process, as the embodiment of pattern in structure, is one of cognition or knowing. This mental process means that all living systems have or even *are* 'mind' in that they can think, perceive, feel and do. Human systems have mind that we recognise as 'culture'. Culture, therefore, is a process of the social mind of a human group. It is the mental process that enables the embodiment of social pattern in social structure. Because of the complexity of human systems, there is an 'inner world' of concepts, ideas and symbols arising from human thought, consciousness and language which means that "human social systems exist not only in the physical domain but also

in a symbolic social domain" (Capra 1996:206). In this social symbolic domain the social rules generated by the system, unlike rules in physical systems, can be broken and are subject to interpretation and development through language and communication.

Human culture or the 'social mind' is, therefore, not a thing, but a process. Mind or cognition from the viewpoint of the Santiago theory, to which Capra (1996) enthusiastically subscribes, is identified with the process of life. It is conceived as complex, nonlinear and interconnected network process rather than as linear, mechanistic computation. The autopoietic system's 'structural coupling' with its environment is fundamentally cognitive. The system undergoes structural change in response to environmental change whilst maintaining an ordered pattern of organisation. The environment triggers changes but does not specify or direct them because the cognitive system 'brings forth a world' through imaginative invention. The mind of the system is what specifies which perturbations from the environment are significant and how the network responds to a selected disturbance through changes in its patterns of connectivity. Mind or cognition, therefore, is synonymous with learning and development, which allows intelligent interaction with the environment. Human cognition (or 'culture'), which is highly sophisticated, allows such coupling with its environment *and* itself. As a result human culture " brings forth not only an external but also an internal world. In human beings, the bringing forth of such an inner world is intimately linked to language, thought, and consciousness" (Capra 1996:263).

Human cognition is characterised by self-awareness as well as an awareness of the environment. Human consciousness involves the bringing forth of an inner world in a process intimately linked to language. In the Santiago theory, communication is regarded as involving a co-ordination of behaviour, which enables 'structural coupling', rather than a transmission of information. Linguistic communication involves learned communicative behaviour and language is linguistic communication involving "communication about communication" (Capra 1996: 280). Human language provides words as tokens for linguistic coordination and enable, through further 'distinctions of distinctions' the creation of the notion of objects. Objects are the basis upon which abstraction is possible. Self-awareness arises when we employ the notion of an object and associated abstractions to describe ourselves.

Humans, consequently, exist in a semantic domain created by our 'languaging' and the "uniqueness of human beings lies in our ability to continually weave the linguistic network in which we are embedded" (Capra 1996:282). We 'bring forth' the human world through language and action, and this world includes our inner world of abstract thought, concepts, symbols, representations and awareness of 'self '. This is the human dilemma; self is an abstraction, which allows us to create our 'independent' identity through language and then permits us to let ourselves believe that we exist and belong to an independent, objective reality.

This has major implications for epistemology and ontology. It requires rejection of the objectivist epistemological notion of cognition as a representation of an independent, pre-given, concrete, ontological reality. In bringing forth a world, cognition is a nominal process and, in Baudrillard's terms, "the map precedes the territory" (Baudrillard 1996: 75). In other words " the ways in which we delineate objects and identify patterns out of the multitude of sensory inputs we receive depends on our physical constitution" (Capra 1996: 264) and humans 'see what they believe' rather than 'believe what they see'. As a result there is no 'information' in the process of cognition in the sense of objective data because meaning resides in the context from which information has been abstracted. For example, a red traffic light means 'stop' only in the context of a set of learned or 'cultural' rules that 'brings forth' the commonsensical meaning of 'red' as information about stopping.

IMPLICATIONS FOR NETWORK THEORY

In the rest of this paper, network theory is examined in the context of Capra's (1996) challenge to modernist science in his holistic, ecological view of living systems. This view requires us to face up to the limitations of modernism, to reject of its linear, mechanistic metaphors and, consequently its view of systems as 'dead'. The argument proposed is that network analysis in the main has escaped the structural functionalist preoccupation with structural form only to adopt, in application of an "anti-categorical imperative" (Emirbayer and Goodwin 1994: 1414) that eschews all attempts at explanation of behaviour involving categorical attributes of actors. It represents a structuralist preoccupation with relational pattern.

In Capra's (1996) terms, cultural or cognitive processes, network patterns and dissipative network structures are *completely* interrelated. Capra's thesis, requires a simultaneous and equal focus upon these three interrelated criteria. Any approach that leaves out cultural process, or denies equal treatment any of the three different but interdependent and inseparable criteria to develop comprehensive description, will result in reductionist and mechanistic misunderstandings of networks as living systems. Cultural process or 'culture' is the criteria, which has been most comprehensively overlooked in network analysis. Within the ten different schools (Araujo and Easton 1996, p.63) of network theory, this varies from apparent purposeful avoidance to avoidance with recognition of its potential importance. Capra's (1996) thesis, requires a simultaneous and equal focus upon the three interrelated criteria of structure, pattern and cognitive process or 'culture'. The failure to come to terms with the latter impoverishes network analysis and, consequently, a serious effort to accommodate culture in network approaches is prescient.

A Cultural Critique of Network Theory

Capra's (1996) thesis requires us to revisit the lamentations of DiMaggio (1992), Emirbayer and Goodwin (1994), and Gómez Arias and Acebrón, (2001) as to the limitations of network analysis. Culture as systems of meaning and ideas has been ignored generally in network analysis, which has adopted an emphasis upon relational structures (DiMaggio 1992). Emirbayer and Goodwin maintain that network analysis "either neglects or inadequately conceptualises the crucial dimension of subjective meaning and motivation" (Emirbayer and Goodwin 1994: 1413) and propose "an adequate approach to historical explanation must encompass both social structural and cultural perspectives on social action" (Emirbayer and Goodwin 1994: 1413). They conclude that "network analysis as it has been developed to date has inadequately theorized the causal role of ideals, beliefs and values, and of the actors that strive to realize them; as a result, it has neglected the cultural and symbolic moment in the very determination of social action. Network analysis gains its purchase upon social structures only at the considerable cost of losing its conceptual grasp upon culture, agency, and process" (Emirbayer and Goodwin 1994: 1446). The consequence is a general failure of network analysis to grasp dynamic processes that transform networks and shape social reality over time.

The preoccupation with pattern within most network analysis means that any understanding of the role of perceptions and attitudes in networks is as a *consequence* of the structure of relations amongst actors and their individual positional location within the network structure. There is no equality of focus between pattern and process here. Process is determined by pattern and there is no sense in which the mutuality of pattern, process and structure, as required by Capra's (1996) hypothesis, is accommodated. Network analysis generally is characterised by such 'pattern determinism' and is generally devoid of an understanding of pattern as incoherent except in the context of cognitive process and dissipative structure.

When recognising the relevance of cultural process, therefore, there is a tendency within network analysis to unconsciously denigrate it. For example, in their stalwart attempt to incorporate culture into the AAR model of the IMP Group, Welch and Wilkinson (2001) reduce culture to a real, substantive, concrete, structured, measurable variable capable of being modelled within such this nomothetic model. This cultural conflation unconsciously conspires to "simply adding another 'variable' to our complex explanatory equation, as if culture were itself nothing more than a residual category to be brought in after the fact " (Emirbayer and Goodwin 1994: 1440).

Hakansson and Snehota identify the cultural nature of interaction between actors in forming bonds which involve ideas, 'learning' and socially constructed 'meaning' (Hakansson and Snehota 1995,p.202) as well as the development of trust and the construction of identities (Hakansson and Snehota 1995p.204). They propose that relating to 'context' rather than adapting to environment is key to understanding organizational effectiveness. Relating activities concern coordinative activity between rather than within organizations, which involves enactment of the context and creation of strategic identity. The pattern of activities in an interactive, relational context, is, according to Hakansson and Snehota, guided by values and norms of behaviour, rather than by logical and rational planning (Hakansson and Snehota 1990 p.536). The context of an organization is a 'learned' social symbolic reality that is 'framed' through interpretation and ex-post rationalization of past experience involving a social process of communication through codes, symbols and routines.

This is what has been described as "structuralist constructionism" (Emirbayer and Goodwin 1994: 1425); the most developed form of network analysis, which does

attempt to take account of culture and most closely accommodates the expectations of Capra's (1996) thesis. The problem with it, apart from the general lack of an agenda to explore it until recently within the IMP Group, is its embeddedness in assumptions consonant with Parsonian functionalism.

Structural constructionism, like Parsons effectively conflates the cognitive realm (comprising ideas and beliefs) and the cathectic (affective / emotional) realm to a hybrid which effectively "rules out analysis of affectively and evaluatively neutral, taken-for-granted aspects of routine behaviour ex cathedra" (DiMaggio and Powell:1991:17). This conflation of cognitive and cathectic realms of culture is compounded by the subsequent domination of studies involving culture by evaluative, deterministic models such as Hofstede's 4-D (Four Dimensions) model of values (Hofstede:1980).

The result is a dominant, simplistic and predominantly 'regulatory' (norms, values, routines) (DiMaggio,1994,27) view that regards values as 'essential', 'foundational' or 'core'. So for example, for Hofstede (1980), culture is metaphorically an 'onion' with foundational values at its centre. This reflects a dominant 'cross-cultural' or 'comparative management' theme, involving the intersection of functionalist anthropology and neo-classical management theory (Smircich 1983). This approach adheres to assumptions dedicated towards concern for the problem of social order and to objectivism. It invariably results in treating culture as an independent variable imported into organizations and revealed through the patterns of actions and attitudes of organizational members (Smircich 1983,p.343). It adheres to organismic metaphors in conceptualising organized behaviour. It seeks to identify general and contingent causality in the relationship between the cultural variable and organizational variables. Identifying the deterministic causality of culture is, therefore, seen as critical in the search for predictable, modernist means of organizational management and control (Smircich 1983,p.347).

An alternative 'constitutive' approach, favoured by most anthropologists. Culture from a 'constitutive' viewpoint is seen as providing systems of meaning, which define actors 'interests', so enabling economic action, which in turn generates categories and understanding in an iterative, rather than deterministic, process. Such an antifoundational view is also an "important postmodern conclusion" (Firat and

Venkatesh, 1995,249) which derives particularly from Bourdieu (1984) who characterized socially constructed reality as a synthetic process of economic and symbolic structuration.

The IMP Group unlike many other schools of network analysis, therefore, has recognised that culture is important. Axelsson (1993), for example recognises the subjective nature of business relationships and the tacit nature of knowledge within and about networks. What appears to have been lacking so far is a significant agenda to do anything about exploring culture. Meaning has been downplayed by IMP scholars (Hellgren, et al. 1993; Welch and Wilkinson 2001) and there appears to be a reticence to adopt the epistemological and ontological consequences of taking culture seriously. Outlining this agenda is the objective of the final section of this paper.

A CULTURAL AGENDA

In this section it is argued that the IMP group is better placed than most other schools of network theory to explore networks using an approach that does not denigrate the importance of culture as the 'social mind' or cognitive process. This potential promises to address the concerns that the tools of network analysis gain a purchase on social structure but "fail ultimately to make sense of the mechanisms through which these relationships are reproduced or reconfigured over time" (Emirbayer and Goodwin 1994: 1447). From Capra's (1996) viewpoint, the key to success is to understand that relational structures are a reification of a nominal pattern invented through a cultural or cognitive process. To understand such complexity requires acceptance that there is no one best way and no single approach capable of discovery of an unequivocal and eternal truth.

Epistemological and ontological consequences

Capra (1996) advocates adoption of a new 'epistemic' paradigm that accepts that epistemology, or the process of knowing, has to be included explicity in the description of natural phenomena. Consonant with this is adoption of an antifoundational conception of knowledge, which replaces essentialist metaphors with a metaphor of knowledge as itself a 'network'. As a result as we "perceive reality as a network of relationships, our descriptions, too, form an interconnected network of concepts and models in which there are no foundations" (Capra 1996:39). As a result knowledge is only ever limited and approximate; scientific certainty is an illusion and the adoption of

an understanding of all knowledge as a network of ideas brings with it an appreciation that cognition or thinking is contextual and processual. Cognition does not, therefore, involve a computer-like mental representation of an ontologically real world. The process of knowing is the very process of life because everything that lives also 'knows' by inventing, constructing or 'bringing forth' its own identity, the identification of others and of the environment. This requires acceptance of the claim that "it is not possible for the researcher to place himself outside of reality and look at it like an external God" (Gómez Arias and Acebrón 2001,p.14).

Methodological consequences

All this means that the pursuit of developing a nomothetic model, such as the current received wisdom within the IMP Group of Hakansson and Snehota's (1995) actors-resources-activities model has to be abandoned because it provides a nursing blanket to the prevailing modernist idea that we are 'progressing' towards a universally true understanding of business networks. We are not. There is no final understanding, model or knowledge form that corresponds to a totalising truth. It would be comforting to provide methodological prescriptions for exploring the structure, pattern and process of business networks. Such prescriptions, however, are invariably mirages.

Research without a 'safety net' boils down to four basic strategies; namely curiosity, courage, reflection and dialogue (Gummesson 2001). It involves postmodern approaches to market and marketing research that ,for example, employ hermeneutical techniques emphasising four key concepts of socialisation, text, chorality and interpretation (Gómez Arias and Acebrón 2001). It needs each of us to embark, like Gummesson, on a never-ending "journey through Methodologyland" (Gummerson 2001:27) and a relentless questioning of mainstream choices of research approaches. The future looks uncertain but is probably going to involve greater eclecticism, flexibility and *bricolage* (Alasuutari 1995:2) in methodological as well as epistemological and ontological choices. Postmodern conditions and the arrival of the 'cultural turn' mean an end of many of the suppositions upon which research has so far been based. Paul Feyerabend (1996) suggests that the new conditions justify an attitude of 'anything goes'. The proposition here is that researchers need to free themselves from inductive reasoning when required and proceed 'counterinductively' where necessary. This approach is sympathetic to the objective of furthering the understanding of social

and cultural phenomena over theoretical or methodological 'purity' and paradigmatic hermeticism. It is, for example, consonant with a 'vision' of a more 'binocular' (Morgan 1986) or 'plurivocal' understanding of human experience that simultaneously allows more than one 'lens' to be applied to understanding the human condition. Abandonment of 'one best way' is likely to require 'Paradigm crossing, which involves recognising and engaging multiple paradigms requiring the cognitive flexibility to accept the coexistence of multiple truths and the expectation of benefits of 'mutual arising' from the synthesis of apparent opposites. (Schultz and Hatch 1996).

Research agenda

The research agenda consequent of the conceptions of distribution networks as a culture of collaboration involves a divergence from the current agenda. In conceiving culture as a network of ideas, it requires a means of understanding how networkers prescribe their environment, their 'self ' and others through symbolism. It requires recognition that reality and networkers descriptions of it are a network of relationships. It requires the study of culture to adopt the consonant agenda of the IMP group; namely to put 'relationships' as the central construct but it also requires a shift upon understanding the nominal nature of ideational relationships and to accommodate the 'process' element of networks.

Fortunately a suitable research model exists to meet these challenges. Strauss and Quinn (1997) propose a model of culture based upon the assumption that cultural meaning are produced at the interaction of extrapersonal and intrapersonal ideas. Intrapersonal ideas or 'schemas' are "networks of strongly connected cognitive elements" (Strauss and Quinn 1997: 6). As a result what something means to networkers "depends on exactly what they are experiencing at the moment and the interpretive framework they bring to the moment as a result of their past experiences" (Strauss and Quinn 1997: 6). The principal vehicle for accessing extrapersonal and intrapersonal ideas, and their interaction, is the discourse (information, communication and knowledge) they employ. This is a research agenda with considerable promise for IMP researchers in that it enables the operationalisation of culture as a patterned network of ideas and symbols and, consequently, as an ongoing *process* of simultaneous change and stability.

CONCLUSIONS

The cultural dimension has played an important role more recently in schools of network analysis. It has been argued here that their approach remains functionalist by adhering to assumptions fixed on social order and objectivism, and conflating the cognitive and cathectic realms of culture. Consequently, these approaches continue to provide methodological prescriptions for exploring structure, pattern and process of business networks in their efforts to 'progress' towards a universally true understanding of the latter.

This paper presents the argument that there is no single method capable of discovering one ultimate truth. Instead, taking Capra's antifoundationalist viewpoint that, in understanding knowledge as being a network of ideas, cognition or thinking becomes contextual and processual. Thus the process of knowing is the very process of life. The researcher is part of this process of inventing, constructing an identity, not an external evaluator progressing towards a universally true understanding of business networks. Consequently, researchers need to free themselves from inductive reasoning and proceed 'counterinductively'. This will require the adoption of a more eclectic and flexible approach that will lead to multiple rather than universal truths.

Culture as 'cognitive process' has to be understood as a verb rather than a noun. Processes (verbs) cannot be reduced to things, structures or Form (nouns). The suggestion is that the verbs, nouns and other elements are equally important to the construction of sentences that can be understood and make sense. Taking this metaphor a bit further, the paper appeals for 'sentence constructions' that are able to adequately accommodate diversity. The research agenda proposed to meet these challenges is that of Strauss and Quinn (1997), which has the considerable advantage of putting ideational *relationships* as the core construction in the task of understanding culture. As a result, the implication is that not only must we understand networks as relational but also we need to understand how networks are imagined through the framework of a network of ideas.

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