

THE RADICAL NEED FOR SEMIOTICS IN IS RESEARCH AND PRACTICE

Why the Urgency?

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Key-words: Organisational Meaning-making, Semiotics, Organisational Semiotics, Saussurean Sign Theory, Peircean Sign Theory

Abstract: There has been a systematic effort, among management and computing science scholars, to explore novel perspectives which may unveil the full potential of organisation's capabilities. Among those efforts, semiotics stands out, in particular in information systems analysis and design. Semiotics is one of the most productive and yet still largely unexplored area in information systems research. The present paper argues that semiotics plays the crucial role of bridging the two extremes of organisational reality: the formal and the informal, the predictable and the unpredictable, and the linear and the complex. This paper addresses the issue of organisational meaning-making as a knowledge field which directly connects to semiotics theory. This paper also revises the evolution of semiotics thought, the impact of Peircean and Saussurean semiotics in contemporary thinking, and the creative tensions between structuralist and post-structuralist perspectives on semiotics.

1 INTRODUCTION

There is one single argument that synthesises the relevance of semiotics theory for Information Systems research and practice: semiotics enables the integration of the formal, predictable and controllable aspects of organisational life, on one side, and the informal, innovative and creative dynamics of ongoing organisational reality, on the other side.

A wide range of works illustrate this integrative capacity of semiotics theory, from organisational semiotics literature (*e.g.*, Stamper, 1973, 2000, Liu, 2000, Filipe, 2000, Liu *et al*, 2001) to the scientific community of the language and action perspective (*e.g.*, Winograd, Flores, 1986, Goldkuhl, Röstlinger, 1999, Andersen, 2000).

Both management theory and IS research have acknowledged the need to align operations and strategy (*e.g.*, Sveiby, 2001) and the efforts to develop synergies between the hard and the soft organisational aspects (*e.g.*, Checkland, 1999). However, there is still a large unexplored potential in terms of the practical applications of semiotics to IS practice.

The present paper will explore the notion of meaning-making under the double argument that the process of constructing meaningful significations is present in every organisational action and that the design and development of IS plays a key and determining role in this process, critically affecting organisational effectiveness end results.

2 ORGANISATIONAL MEANING-MAKING

2.1 Meaning and Social Interaction

The context of high competition that characterises current organisational environments implies that there has been an effort towards exploring less conventional aspects of management. These efforts are illustrated by the developments in areas such as organisational meaning-making (*e.g.*, Daft, Weick, 1984, Weick, 2001). In general terms, the quality of interpersonal interaction is central for organisational meaning-making (Bokeno, 2009). These relations may be analysed from a social perspective. Focusing on organisational meaning-making in

inter-organisational networks, Hallikas (*et al*, 2009) stresses the connections between innovation and learning.

Both management theories, which focus on achieving results, and organisation theories, that focus on the logic and structure, i.e. the organisation, that is behind those results, are gradually showing a new interest in the *social* aspects of human interaction. This is critically relevant for knowledge-intensive organisations or network, knowledge-driven or knowledge-based organisations. “Innovation, learning and knowledge leverage are crucial for the competitive edge of knowledge-intensive firms” (Ojanen, Hallikas, 2009). The crucial role of meaning-making at organisational level has been widely recognised by organisational theory scholars.

2.2 Semiotics and Meaning-making

Semiotics plays a crucial role in organisational research. This role is related to the need to link organisational practices with the meaning-making processes that sustain such practices. The need to raise awareness of the importance of the organisational social relations that enable knowledge sharing in knowledge-intensive organisations is critical for IS research and practice. This acknowledgement is fundamentally grounded in semiotic related concerns. That is, social relations derive their meaning from the discursive practices of their actors. Within organisational communities, semiotic theory enables these meaning-making processes to be addressed. Social semiotics, in particular, has these processes as its object of study.

“Semiotics is currently the most complete and sophisticated theory of meaning and culture.” (Lagopoulos, 1993).

What is meaning-making? In general terms, and within the context of the present work, it is possible to propose the following interpretations. Meaning is the signification that human beings assign to “things in the world” through the use of language. This implicitly includes the consequences of such signification. And this signification also implies a network of relationships with other “things in the world”. This happens because all meaning occurs within previous meaningful relationships and presupposes a larger context of a meaningful ‘world’. Meaning-making is the participative (and largely unconscious) process of continuously, tentatively and provisionally creating sense through involvement in action and in discursive practices, in bodily contact with “things in the world”, within

specific social contexts and social relations. Organisational meaning-making is how signification is constructed at organisational level thus enabling the collective, though pluralistic, interpretation of organisational reality.

“Meaning is not something psychological in an individual but something developed socially across a community.” (Grim *et al*, 2004).

Organisational meaning-making is a social process. Social semiotics critically addresses meaning-making as such. Organisational semiotics and the notion of information fields (Stamper, 1973) directly concern the collective sharing of social norms and the creation of shared understanding.

“Meaning, at the social level, refers to the relations of signs to the norm structures specific to the social context where the sign is uttered.” (Filipe, 2000).

Semiosis is meaning-making. Semiosis is how Peirce describes the process of *recognising* “things in the world” (Filipe, 2000). As social semioticians argue, “Semiosis are the processes and effects of the production and reproduction, reception and circulation of meaning in all forms.” (Hodge, Kress, 1988). Organisational meaning-making may be interpreted in the light of *social philosophy* as the present thesis argues, and the present chapter explains. Norms include social and cultural dimensions, as Ulrich ascertains.

“Normative principles, or simply norms, are standards or rules that regulate human interaction in social contexts, from communication (linguistic norms, norms of etiquette) to legal (law) and moral norms (proper conduct); normative implications are the norms that are contained, whether intentionally or not, in the consequences of specific actions in that they are needed to justify these consequences.” (Ulrich, 2001).

Schein’s (2007) work on organisational culture is consistent with this position. “Once people make sense of their world collectively, creating norms and developing tacit assumptions, those norms and assumptions define reality, the individual’s identity and group membership.” (Schein, 2007). These are norm structures, as Filipe calls them. Allan *et al* (2008) call for a radical reframing of management norms, in specific organisations, namely natural-resource management organisations.

3 PHILOSOPHICAL TRADITIONS IN IS RESEARCH AND THE EVOLUTION OF SEMIOTICS

Computing science research has a strong tradition of philosophically based approaches. Several authors have based their computing science research on social philosophy (e.g., Stamper, 1973, Goldkuhl, Lyytinen, 1982, Maturana, Varela, 1980, Winograd, Flores, 1986, Liu, 1993, Filipe, 2000, Clarke, 2000, Andersen 2000, Ulrich, 2001, Dietz, 2003, Bynum, Rogerson, 2004, Ciborra, 1996, Ciborra, Willcocks, 2006, Mathieson, 2007, Oates, Fitzgerald, 2007, Hovorka *et al*, 2008, Stahl, 2008). Different areas have been explored, including ontology, pragmatism, semiotics, social constructivism, philosophy of language and philosophy of action. "There is the need for *redefining* information science in terms much more comprehensive, multilevel *philosophy of information*, of which *semiotics forms the foundation*." (Ulrich, 2001)(italics added).

Designing information systems is also *designing ways of being*, as Winograd and Flores argue, based on Heidegger's work:

"All new technologies develop within a background of a tacit understanding of human nature and human work. The use of technology in turn leads to fundamental changes in what we do, and ultimately in what it is to be human. We encounter the deep questions of design when we recognise that in designing tools we are designing ways of being." (Winograd, Flores, 1986).

When designing work processes, workflows, organisational structures or information systems, the definition of these processes not only determine abstract formalisations but they also have a direct effect on the people who are to perform such work, through the actual enactment of the work practices themselves.

3.1 Historical Origins of Semiotics

Semiotics, as a discipline, corresponds to the analysis of signs and the study of sign systems (Elliot, Ray, 2003). The idea that sign systems are of great consequence is easy enough to grasp, though the recognition of the importance and the need to study sign systems belongs to late modern age (Bouissac, 1998). A full-blown semiotic awareness arises at the turn of the nineteenth and the twentieth

century, through the influence of two great scholars: Ferdinand Saussure [1857-1913] in Europe and Charles Sanders Peirce [1839-1914] in North America (Chandler, 2002).

Different schools of thought emerged from Saussure's and Peirce's work giving rise to diverse currents that deeply influenced what came to be known as the *linguistic turn* and the *context turn* in the social and human sciences, emerging, respectively, in the second and third quarter of the twentieth century. These were epistemological shifts which characterised the main paradigm of a certain period of time (Delanty, Strydom, 2003). From Saussure's work, structuralism developed, in the 1950s, as well as other different branches, among which one that would later give rise, in the 1970s, to social semiotics, which is post-structuralist. From Peirce's work (1931, 1955), pragmatism developed, together with varied schools of semiotic analysis. Saussure's approach to semiotics focused on human signs, language use and discourse, and thus inspired widely diverse philosophical work (Lemke, 1995). This included: Lévi-Strauss's (1963) work on anthropology, giving rise to structuralism; Foucault's work on sociology, giving rise to social theories of discourse; Barthes's (1964, 1996) work on cultural analysis; Baudrillard and Derrida's (1978) work on sociologic post-modern analysis; and the works of Jacques Lacan and Julia Kristeva (1975) on psychoanalysis (Benton, Craib, 2001).

Peirce's work developed a perspective of semiotics as permeating all reality, and a view of the universe as "perfused with signs" (Chandler, 2002). Peirce's work inspired many schools of thought and many thinkers, including Morris, Richards, Ogden, Fisch and Sebeok. The semiotic works of Umberto Eco (1979) as a medieval historian, essayist and novelist and of Roman Jakobson, as founder of the Prague School in 1920, cannot be classified as being from a Saussurean or a Peircian school of thought but rather show diffuse links to both approaches (Benton, Craib, 2001). In terms of origins and influences, Saussure worked in the tradition of Augustine, William of Ockham, and John Locke (Nöth, 1985). Peirce also followed middle ages philosophers and Locke, Hobbes and Reid, of the seventeenth century, and besides them he was influenced by Plato, Aristotle and the Stoics. The ideas of both Saussure and Peirce became the basis for circumscribing an autonomous field of inquiry that sought to understand the structures and processes that supported both the production and interpretation of signs.

3.2 The Two Main Contemporary Schools of thought in Semiotics

Saussure's (1959) later work was published by his students in 1916, through their own notes of Saussure's *Cours de linguistique générale*, after his death in 1913. Saussure used the term *semiology* to designate the field he proposed for studying language structures. Today, the older term *semiotics* is widely used. Saussure emphasised that the study of signs should be divided into two branches: the *synchronic*, that refers to the study of signs in a given point in time; and the *diachronic*, that corresponds to the investigation of how signs change in form and meaning over time. Saussure's definition of sign laid down the course that semiotic inquiry was to take during the first half of the twentieth century (Chandler, 2002). He defined a sign as a form made up of something physical, such as sounds, letters, or gestures, that he termed the *signifier*, and the image or the concept to which the signifier refers, that he called the *signified*. He then called the relation that holds between the two *signification*. For Saussure a sign signifies by virtue of its *difference* from other signs. Saussure explicitly considered the connection between the signifier and the signified an *arbitrary* one that human beings and societies have established at will. Whereas Saussure's sign (signifier/signified) needs to be combined with other signs to take part in the flow of meaning, Peirce's version of signification has an in-built mechanism (Hoopes, 1991). Peirce's triadic theory of a sign is composed of: the *representamen*, the sign itself; the *object*, corresponding to Saussure's signified (image or concept); and an *interpretant* that is like a "sign in the mind". Peirce thus called the signifier (the physical sign) a *representamen* – literally, something that does the representing. Peirce's signification process develops *ad infinitum* because the interpretant, the sign in the mind, becomes the representamen, i.e. the sign to be interpreted, in the next cyclical relationship. Peirce's development of this theory is highly complex as this triadic relationship also relates to formal aspects of firstness, secondness and thirdness, and also to the categories as they relate to *being* as quality, brute facts and general law (Peirce, 1931).

Saussure's (1959) theory of semiology describes the way in which the general phenomenon of language is made up of two factors: *langue* and *parole*. *Langue* is the system of differences between signs, and *parole* corresponds to the individual act of speech. *Langue* can be thought of as a large communal collection of all the possible different

signs that might be pulled out and utilised in the construction of an instance of *parole*. The fact that language is a system used by all, means that it is also a *social phenomenon* (Lemke, 1995). This system is abstract, and the rules are known without necessarily needing to be continually tangible. This taken for granted nature of language use makes it extremely complex. However, this complexity of language implies that it has a high explanatory power in terms of the study of social relations and interdependencies. Semiotics is a powerful theory for the study of human culture.

4 THE TRADITION OF ORGANISATIONAL SEMIOTICS: APPLYING SEMIOTICS TO IS ANALYSIS

Semiotics is the study of signs and of sign systems. As Ulrich argues "the semiotic insight into the social interactive nature of information systems is fundamental" (Ulrich, 2001). This position was taken by Stamper who developed a semiotic theory of information systems design and development. Stamper (1973) coined the term "organisational semiotics" and his pioneer work in information systems centred on the use of norms as key organisational elements. Stamper extensively developed his theory of organisational semiotics as a method to help improve the quality of systems analysis and design. Organisational semiotics, through Stamper's seminal work, has set on motion a scientific community that has further developed his original work in the field of information systems. Stamper and this research community explicitly recognises the importance of *organisational social dimensions* and of the key role of *informal communication*. Organisational semiotics "interprets organisations as information systems, independently of technology" (Stamper, 1973)(italics added).

Stamper (1973), radically discards common terminology in order to introduce new perspectives to IS research. This comment is relevant in terms of the way it shifts the attention towards solid theoretical and epistemological grounding of scientific knowledge production within management and information sciences.

"Let us begin by discarding... "information", "meaning", "knowledge" and how they "flow" as we "communicate" them – as though these were all simple, primitive notions we all understand.... Instead, let us

use the notion of a sign as a primitive concept.” (Stamper, 2000).

According to Stamper, the social constructivist perspective on organisations (Berger, Luckmann, 1967), which sustains the interpretation of organisations as *social constructs*, is highly relevant to organisational semiotics. Stamper’s social constructive position is parallel to that of Savery and Duffy (1994) and of Streibel’s (1991) concept of situated learning, as they all share a *constructivist perspective*. While Stamper focuses on the study of organisational social systems and their connections with information systems analysis, these authors focus on instructional technology and its design, in the context of educational sciences. As argues Stamper, we are still scratching the surface of what semiotics has to offer.

“Far more important than efficiency are such information systems properties as openness, honesty, trust, fairness, justice and accountability, responsibility and truthfulness. These are not even registered by our current methods.” (Stamper, 2000).

According to Filipe (2000), *information* is a central concept that may be analysed through diverse perspectives. Filipe, following Stamper, argues that the kernel role of semiotics is that it “offers a framework that allows us to interpret information at syntactic, semantic, pragmatic and social levels” (2000). The social dimension is explicitly considered in organisational semiotics research. Andersen, clarifies the wide and diverse areas where semiotics can be of value in computing science, in general, and in interface design, in particular.

“Semiotics is ‘the mathematics of the humanities’ in the sense that it provides an abstract language covering a diversity of special sign-usages (language, pictures, movies, theatre, etc.). In this capacity, semiotics is helpful for bringing insights from older media to the task of interface design, and for defining the special characteristics of the computer medium. However, semiotics is not limited to interface design but may also contribute to the proper design of program texts and yield predictions about the interaction between computer systems and their *context of use*.” (Andersen, 2000)(italics added).

In parallel with “Organisational Semiotics”, other scientific communities have developed information system models based on theoretical contributions from language philosophy and action philosophy.

The early works of Austin (1962) on speech act theory, followed by the works of Searle (1969, 1999) and of Habermas (1979, 1984), have set on motion the field of language action theories that have influenced the study of information systems analysis within organisational contexts. This is the case of the “Language and Action Perspective” (LAP) (e.g., Winograd, 1968, Flores, Ludlow, 1980, Goldkuhl, Lyytinen, 1982, Winograd, Flores, 1986, Goldkuhl, Röstlinger, 1999, Andersen, 2000), and “Action in Language, Organisations and Information Systems” (ALOIS) (e.g., Goldkuhl, Röstlinger, 2003, Goldkuhl, 2004). These theories have been influential in the development of information systems analysis based on semiotics, pragmatism, speech act theory and philosophy of language. However, the nature of their applications, directed towards information systems design, has been prominently characterised by a structuralist perspective, stressing the inner structures that support and characterise each organisation.

5 STRUCTURALIST AND POST-STRUCTURALIST PERSPECTIVES ON SEMIOTICS

Most approaches to semiotics of the second half of the twentieth century are primarily concerned with the study of meaning from a static point of view, i.e. take a structuralist perspective, while social semiotics diverts the focus to the study of meaning-making as an ongoing and dynamic process, thus following a post-structuralist position (Lemke, 1995). Structuralist semiotics, considered as the *science* of signs, is concerned with the study of sign and sign systems, and of what a correct and exact interpretation of the sign should be. Social semiotics down-grades the importance of the end product of the interpretation process, the final and static meaning, and it highlights the importance of the interpretation *process* itself and of the role and being of the interpreter, i.e. meaning-making as such.

Social semiotics developed in the 1970s as an effort to extend linguistic analysis to social contexts. Halliday (1978), Kress (1996, 2001), and Lemke (1995) are some of the authors who studied socio-cultural phenomena using semiotics as an interpretation grid. An important aspect of this movement is that it represents an explicit and publicly assumed alternative to the dominant cognitivist perspective. Applying social semiotics to

organisation contexts, and thus considering organisations as sense-making entities, enables the development of alternative approaches and the creation of a critical theoretical framework to conduct an analysis of organisations.

According to Nöth (1990) the development of American structuralism in linguistics derived from the foundational work of Bloomfield (1933). With the work of Harris (1951) the structuralist methodology reached its peak. In opposition to previous historicism in linguistics, Bloomfield postulated a descriptive approach to language, *i.e.* an antimentalistic and behaviourist approach. According to Bloomfield's structuralist and descriptive perspective, no internal mental facts, such as ideas, concepts, or intentions, should be taken in consideration in scientific analysis. Only observable behaviour, of speech-acts in the context of human behaviour, was considered as valid.

The consequence of this antimentalistic point of view was that questions of semantics were long neglected by American structuralists. According to Nöth, taxonomies and classifications as well as the interest in the study of speech-acts and of observable behaviour was still strong in late twentieth-century's analysis inspired by language philosophy. However, this emphasis has shifted its focus and has been developed towards mentalistic and cognitivist perspectives (Nöth, 1990). Nöth's assertion is in line with other authors' comments such as the identification of the *knowledge turn*, during the last quarter of the twentieth-century (Delanty, Strydom, 2003) and the dominance of cognitivist and individualistic approaches in management theory. Organisational learning social tradition scholars have been part of the theoretical movement that has reacted against this dominance. This corresponds to what some authors call the *social turn* in organisation studies (*e.g.*, Child, Heavens, 2001).

Semiotic theory is a powerful resource in the study of *organisational* creation of meaning, considering meaning, within the context of the organisational communities, as a central component of organisational learning. Semiotics consists on a possible theoretical alternative in terms of addressing the social aspects of organisational learning phenomena. Social semiotics, in particular, specifically addresses the process of *constituting meaningful practices*, arguing that meaning emerges from an ongoing and implicit negotiation between different parties involved in a common context.

Different organisation theory authors stress the crucial role of semiotics. Gherardi and Nicolini (2001) highlight the importance of Peirce's work on

semiotics. They argue that Peirce's work on semiotics is essential for the understanding of meaning creation, interpreted from a social perspective, because of Peirce's theory that "individuals cannot perceive things or think about the world without the mediation of signs" (Nicolini, 2001). Bartel and Garup (2003) draw on Peirce's concept of abduction in order to present the concept of 'adaptive abduction' as the process through which actors generate knowledge from narratives. These authors refer to this process of interpreting narratives and generating knowledge as semiotic, and cite the works of Eco (1979) and Peirce (1931).

In brief, if the purpose of a specific research project is to study the social aspects of organisations, then cognitivism is inadequate as it focuses primarily on the individual. The social aspects are highly relevant to the study of organisational IS because it is necessary to grasp the collective dimensions of organisational meaning-making that continuously take place within organisational activities and daily routines. Although semiotic theory has been already applied to organisational information systems design, it is possible to extend this application to the study of organisational meaning-making and to the role played by IS in this process. Social semiotic theory is particularly relevant to such study as it focuses on how meaning is created through social practices and interactions.

The tension between structuralist and post-structuralist perspectives is also present in organisational and management areas. As Castells' stresses, "there is an extraordinary gap between our technical overdevelopment and our social underdevelopment." (1998). This 'extraordinary gap' is reflected in the technocentric and undersocialised dominant perspective on organisations, present in conventional management.

The organisational perspectives implicit in mainstream management theory are connected with a structural-functionalist approach, which tends to be related with a positivist and individualistic stance, devaluing concerns with symbols, values, norms and culture, as argue authors such as Child and Heavens (2001). Post-modern oriented research, addressing issues related to language, narratives, discourse, power, dominance, ambiguity and conflict, among others, have had an important influence in terms of the development of non-mainstream approaches to organisations. Organisation theories such as those from authors like Stacey (1992, 2001), Alvesson and Sköldbberg (2000), Alexander *et al* (1977) are examples of such approaches.

6 CONCLUSIONS

A social perspective reads and interprets organisational reality highlighting and disclosing social related issues. These social dimensions are constantly present because they are constitutive of organisational reality itself. Organisations are human social initiatives. Organisations share with all other human endeavours a set of common characteristics, which are the object of study of social philosophy as a knowledge field. The advantage of using social philosophy as a reading matrix of organisational reality is that it enables addressing directly those universal dimensions, i.e. that which uniquely characterises every human social creation.

The universal characteristic of all human enterprises is their meaning-making capacity. The creation of meaning processes which emerge from collective practices is constitutively - and inherently unavoidable - a semiotic process.

The present paper argues that there is a paramount need to strengthen the presence of semiotics theory in organisation studies, in particular through the focus on the impact of information technology. Consequently, IS research and practice plays a critical role in terms of being a privileged object of study for semiotic scholars.

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