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"…the concept 'postindustrial society' emphasizes the centrality of theoretical knowledge as the axis around which new technology, economic growth and the stratification of society will be organized" (Bell 1974:112).

Introduction

Ascribing knowledge the role of central axis of development expresses and summarises the subtle shifts that anybody, paying the minimum attention, would currently be able to see taking place in the organisational environment. The growing role of knowledge in society is rousing one's curiosity about the early roots of this phenomenon and the outcomes it might bring. Therefore, the task of this essay will be to discuss the meaning and role of knowledge in the light of the most recent development in philosophical thought. The second half of this essay concentrates on the work of the French postmodern philosopher Jean-Francois Lyotard, while discussing his views on knowledge management, generation, and contextual nature.

Before beginning with that task, however, the meaning of the term *knowledge*, that somehow still seems nebulous (at least in the authors' mind), will be once more studied closely. And it is the method that Hatch (1997) uses, to analyse the subject of organisation theory, that has guided the authors to the idea of how, perhaps, it would be finally possible to succeed in comprehending this term.

Hatch (1997) takes three historical perspectives – modern, symbolic-interpretive, and postmodern – to view each of her topics. It has been the authors' own experience that such method results in her reader achieving better understanding of the subject. In fact, after reading her work, one starts to see the actual limits and narrowness of any single perspective when taken separately.

Therefore, before attempting to explain Lyotard's views on knowledge, a similar approach will be used to analyse the meaning of the word itself. The aim will be to understand knowledge by taking three different perspectives on it – interpretation from modern (including its classical background), symbolic, and postmodern points of view.

The Classical and Modern interpretations

The roots of this perspective trace back to the fundamental economic, political, and social changes taking place during the industrial revolution at the end of the eighteenth and early nineteenth century. It was the time when the first "modern" manufacturing organisations appeared in the British textile industry - the process resulting in the later transformation of the society from agricultural to, what came to be known as, the industrial society (Hatch 1997:23, Wilson 1996:6).

It is this shift that appears to have brought along the flourishing of natural sciences. The ideology of "no more myths" characterises the prevailing thinking pattern that emerged in such society (Wilber 1995:372). The focus of attention shifted towards what were perceived as objective, physical and tangible parts of the "outside" world. This process caused the "ever-increasing specialization necessitated by the enormous amount of data, the complexity of techniques and of theoretical structures within every field. In consequence, the physicist, the biologist, the physiologist and the social scientist …[became] encapsulated in their private universes" (Bertalanffy 1968:30). The "gross reductionism", as Wilber (1995:129) calls it, became the ultimate aim of classical physics - eventually to resolve natural phenomena into a play of elementary units governed by "blind" laws of nature (Bertalanffy 1968:30). Hence it seems most likely to the authors that

in the classical perspective the term *knowledge* would be suitably defined as information or data – simply different combinations of the elementary units (bits).

The modern perspective is largely inspired by the Bertalanffy's General Systems Theory (GST) that, partly as a reaction to the reductionist trends discussed above, was introduced in the 1950s and 1960s (Hatch 1997:34) and defined as "a general science of 'wholeness'" by its author (Bertalanffy 1968:34). The GST concentrated on the fundamental similarities relating to all phenomena in this world. To generalise, all the phenomena around us were referred to as systems, defined as things with interrelated parts (Hatch 1997:35). The idea of interrelated parts emphasises one core similarity to all systems – they can analytically be broken down into subsystems, which are interrelated to each other to compose the system. To understand the whole system, one has not only to analyse the parts but the interrelation between these parts as well. One important notion from the GST, therefore, could be that everything that is valid about the subsystems is valid for the whole as well, but the definition of the whole is not limited to that.

Another important concept, introduced by modernist thinking and angrily attacked by later critics (Wilber 1995:15), was the hierarchy. Bertalanffy (cited by Wilber 1995:15) emphasised that: "The reality in the modern conception appears as a tremendous hierarchical order of organized entities."

> "Hiero- means sacred or holy, and –arch means governance or rule. Introduced by the great sixth-century Christian mystic Saint Dionysius the Areopagite, the "Hierarchies" referred to nine celestial orders, with Seraphim and Cherubim at the top and archangels and angels at the bottom. … As used in modern psychology, evolutionary theory, and systems theory, a hierarchy is simply a ranking of orders of events *according to their holistic capacity*" (Wilber 1995:17).

Consequently modernists would rather see the knowledge as one hierarchical whole. In this perspective, "the world is simply a collection of objectively interlocking events, and knowledge consists in correctly representing those events. Knowledge is of those objects and not the mutual understanding between subjects" (Wilber 1995:439). Murray (1996) offers another similar interpretation of knowledge as the information in context.

Staten (1985:33) is even more precise, offering the clear distinction between the modern and the symbolic-interpretive perspectives on knowledge:

> "Philosophy aims at knowledge of what is true. This formula may be redundant, since knowledge by definition cannot be of what is false (though it may be of the fact that something is false). But still, knowledge is one thing and that which is known is another, and question how to forge an ironclad link between the two cannot be disposed by definition."

Knowledge, in the modern interpretation, clearly appears to be "outside of knower", i.e. to be understood as "that which is known". On the other hand, as will be shown, the mental state of knowing would fit well as the definition of knowledge from the symbolic-interpretive point of view.

Symbolic-Interpretive interpretation

Differences between the modernist and symbolic perspectives are rooted in the epistemology – the branch of philosophy concerned with question "how do we know?" (instead of "what is to be known?" which is the concern of another branch – ontology). The commonly drawn distinction between objectivist (empiricist) and subjectivist (idealist) epistemologies represents one of the most fundamental watersheds in philosophy (Hatch 1997:47). Modernism is largely based upon objectivist assumptions (i.e. the world exists "out there", independent of us or our

knowledge of it). On the other hand, the symbolic perspective relies upon subjective position (i.e. even if the world exists in the objective sense, the knowledge of the world is "in here", filtered through, and altered by the knower). In other words, unlike in the modernist perspective:

> "In the subjectivist epistemology there is no claim made about whether or not reality [including knowledge!] exists independent of the observer; it is assumed that this cannot be known since all the knowledge is mediated by experience" (Hatch 1997:48).

This different epistemological position is "probably the most profound difference we can draw between the three perspectives…" (Hatch 1997:47-48).

Symbolism is also taking qualitative rather than quantitative approach, "carrying preeminetly academic character" and "…[being] grounded in research and theory rather than organizational experiments" (Strati 1998). Gagne and Tewksbury (1999) give more detailed explanation of the symbolic view as the "view from inside" and the position of self in the social environment:

> "As we see it, the self is capable of taking in and assimilating new information. But, while the self is an active agent in society, it is also subject to powerful social forces, specifically to hegemonic systems of knowledge. The self, then, is an active agent in its own creation, but its subjectivity does not exist in a system of its own making (Foucault [1978] 1990). Nor is the self born into a body of its own choosing. Rather than simply providing the vehicle by which the self can interact with society, the body is an essential aspect of self, due to the social meanings assigned to it, the ways that other social actors react to and interact with the embodied individual, and the meanings social actors ascribe to their own bodies."

Symbolic approach focuses on the subjective origin of knowledge and our own *reifying* (i.e. creating reality of the subject of study) part in it (Hatch 1997:41). According to Strati (1998), the symbolist perspective assumes that "the construction of organizational reality [is built] through the negotiation of the participants' symbolic universes." He also asserts that:

"… the organizational symbolism yields a form of organizational knowledge which is a metaphor for organizational understanding. It is not a tool for culture engineering in organizational life or a new paradigm in organization theory. The symbolic approach, in fact, does not provide organizational scholars and organizational actors with clear imperatives in regard to the understanding and managing of organizations".

Finally, before getting confused in this complicated and subjective ocean of symbols and metaphors, a quotation from Weick (cited by Mintzberg 1989:275) appears suitable to summarise and simplify the subject: "A corporation doesn't have a culture. A corporation is a culture. That's why they are so horribly difficult to change." Consequently, it seems reasonable to suggest hereby that, in the symbolic perspective, the essence of knowledge could be emphasised in the best way when simply replacing the word "culture" with "knowledge" in the former quotation.

Postmodern interpretation

Unlike previous perspectives, postmodernism is more easily definable according to what it stands against, and what it is not, rather than what it is. The roots of postmodernist thinking can be sought from history, but it obtained wide public attention after 1979, when Lyotard's book "The Postmodern Condition: A Report on Knowledge" was published (Peters 1995a). Standing against any singular, ultimate, or holistic points of view is largely what postmodernism is all about. Therefore, the single right definition of it, of course, is not available. However, the two underlying lines of this ideology might still be drawn hereby. Firstly, it has fundamentally emerged as the opposition to modernism. Secondly, the key words in order to understand postmodernism appear to be *diversity* and *fragmentation*.

Modernism sees knowledge as the reflection of what is known. It attempts to discover more, develop new technologies and embed the knowledge as a whole, to achieve the one ultimate unified view of the world. However this attempt to set up a unified worldview and an urge towards mutually desirable future, rationality, and technology, has been consistently attacked by postmodernist critics (Hatch 1997:44-45). As expressed by Lyotard (cited by Bain 1995:4): "The development of knowledge, particularly technoscientific knowledge has not brought us closer to emancipation." The modernist view is also accused of having misused the hierarchy and power in order to dominate and to oppress the minorities in the society. "Modernists defend traditional ideals of freedom and reason, whereas postmodernists question the existence of universal truths or disinterested knowledge apart from relations of power" (Nicholson 1995:76).

Postmodernism sees the "great interlocking order" (Wilber 1995) of modernism as a big narrative story. Lyotard (cited by Bain 1995:3) himself defines postmodernism as the "incredulity towards metanarratives." In opposition to any big "narratives", the postmodernists argue that knowledge is *fragmented*, i.e. is produced chaotically in "so many different bits and pieces that there will be no reasonable expectation that they will end up to an integrated singular view" (Hatch 1997:44). In a metaphorical comparison, *a picture* might be suitable to describe the modernist view of knowledge, while *a collage* is used to describe the postmodernist one (Hatch 1997:52).

The limited character of modern worldview, according to postmodernists, became apparent during the crises of 1960s and 1970s. Among others, "Vietnam represented a critical turning point in the perceptions of many of us towards [rational] analysis" (Mintzberg 1989:63). The absence of human (subjective)

dimension might be pointed out as the main weakness in the modernist project. Wilber (1995: 132, 415 and 419) summarises this:

> "It wasn't just that this empirical mapping game was partial: taken in and by itself, it was perfectly self-contradictory. On the other side of the objective strainer, there was simply no evidence whatsoever that this thin objective soup was the only evidence worth knowing. No, that assertion (Right-Hand [i.e. objective] data alone were real) was a Left-Hand [i.e. subjective] judgement that denied all Left-Hand [i.e. subjective] judgements. …The objectivistic worldview could not account for its own status. …In short, Nature was a harmonious whole known by a subject that could not fit into it. …[Therefore] the great interlocking order [of modernity] was true but partial; it was only half of the story."

Still, one finds this fragmented chaotic world that postmodernism is offering to replace the rational one, without any mutually desirable goals for humanity to attain, and without mutual values to cherish, somehow handicapped again. Using *deconstruction* (instead of *construction*) as the main tool to survive (Hatch 1997:46) simply does not seem to be very desirable or *human* way of doing things. It appears exclusive rather than inclusive, a world where *human creativity* has been replaced by *human destruction*. And yet, according to postmodernists, overlooking the human dimension was exactly where the modern rational-industrial worldview went wrong.

Peters (1995:33) writes:

> "The end of science is not 'consensus,' … but paralogy. The practice of paralogism is a search for 'instabilities,' the point of which is not to reach agreement but, rather, to seek to undermine internally the very framework in which the previous 'normal science' had been undertaken."

This is the point where the authors' rebellion-student part (the postmodernist one?) would like to awaken and run out on streets to raise barricades in defence of sanity. What Peters is saying is that there is a *consensus* that the end of science is paralogy. Still, there are others that disagree, and therefore, there is

currently a *paralogy* whether the end of science is consensus or paralogy. And so what? They are only the two sides of the same coin anyway. Is it really so hard for somebody to see that "the incredulity towards metanarratives" is simply another metanarrative itself – just another page in the book of eternal duality? "Internally undermining the very framework of science" is only not solving anything, it is ruining everything, including postmodernism itself.

In quick search to support the critics against postmodernism, Rorty's thoughts (cited by Nuyen 1995:54) of postmodern philosophy as "edifying philosophy", in contrast to the traditional "systematic philosophy", are found:

> "Great systematic philosophers are constructive and offer arguments. Great edifying philosophers are reactive and offer satires, parodies, aphorisms. …Great systematic philosophers, like great scientists, build for eternity. Great edifying philosophers destroy for the sake of their own generation. Systematic philosophers want to put their subject on the secure path of science. Edifying philosophers want to keep space open for the sense of wonder which poets can sometimes cause."

And paradoxically, in this point the authors' other half - the conservative, adult and worried one (modernist this time? – another paradox) - will find comfort. It is exactly this "keeping the space open for the sense and wonder" that withholds one to raise his words against the edifying (postmodernist) philosophy and lets him say instead: "let them be there – they are the part of the whole picture". Indeed, what an empty picture it would be without them.

Wilber (1995 and 1996) attempts to tie the loose ends by suggesting the concept of "four quadrants of reality" (Figure 1) to integrate all the previous perspectives. He points out that all systems (or *holons*, as he calls them to refer their whole/part nature) have the four basic aspects of reality – "the *interior* and *exterior* of the *individual* and the *collective*" (Wilber 1996:75). He maintains that, in order to understand the phenomena around us, their nature of being

simultaneously both super- and subsystems (i.e. the wholes and the parts of bigger

wholes) has to be considered. At the same time, the perspective from within is just

as important as from without. Unlike Bertalanffy's system, which was defined as a

thing, Wilber sees a holon possessing an internal dimension – self – as well.
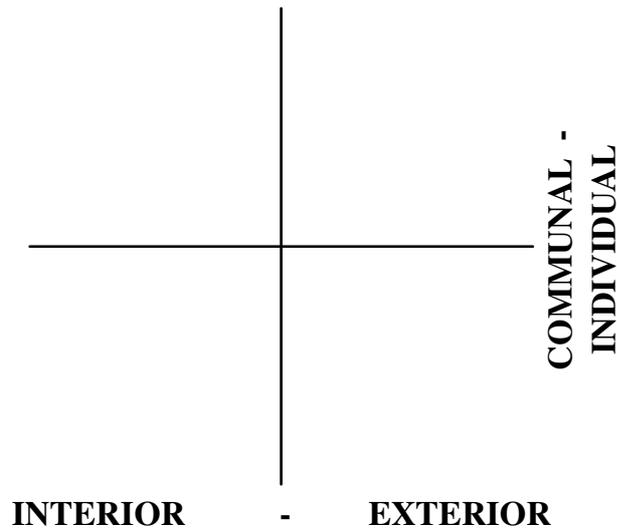

Figure 1. The four quadrants (Wilber 1995:122).

As he explains it: "The within of things is consciousness (or depth), the

without of things is form (or surface)" and "…whereas the Right half can be seen,

the Left half must be interpreted" (Wilber 1995: 111 and 127). An illustration of

these different aspects of a holon is given as follows:

> "For example, I have a thought; a thought occurs to me. That's the given
> holon, which we will use as an example. For this holon, in the Upper-Right
> quadrant, there is a change in brain physiology, a change that can be
> described in completely objective terms (it language): there was a release of
> norepinephrine between the neural synapses in the frontal cortex,
> accompanied by high-amplitude beta waves … and so on. All of which is
> true enough, and all of which is very important.
> But that is not how I experienced the thought, and I will never actually
> *experience* my thought in those terms. Instead the thought had an
> interesting and important meaning to me, which I may or may not share

with you. And even if you know what every single atom in my brain is doing, you will never know the actual details of my thought *unless I tell you*. That is the Upper-Left quadrant or aspect of this holon, this thought that occurred to me" (Wilber 1995:133).

As a conclusion, the "Enlightenment's great crime" is seen as "not gross reductionism but subtle reductionism" (Wilber 1995:132) - ignoring the interior-half of all systems, and concentrating only on the tangible (i.e. the Right) side. "So again, it is not that representational and objective (or empirical) knowledge is simply wrong, but rather is extremely partial" (Wilber 1995:439).

In that sense, it will be suggested hereby that knowledge, when interpreted as a system or a holon, needs to be considered from all fours aspects too. The definitions, offered by the three perspectives above, fit neatly into their places in this picture: knowledge as data referring to Upper-Right, knowledge as information in context to Lower-Right, knowledge as individual understanding to Upper-Left and the organisational knowledge to Lower-Left quadrants. And yet all the four aspects of knowledge would always need to be equally considered to comprehend the full meaning of this term.

Wilber's approach places another important issue of knowledge management – the dispute about the roles of tacit versus explicit knowledge – into new light as well. The common solution suggested to manage tacit knowledge in organisations is turning as much of it as possible into explicit knowledge, and afterwards, handling it similarly to it. It will be suggested hereby, however, that instead of some computing hardware to store it, tacit knowledge needs a suitable human community to grow in, and be handled by. In the framework of Wilber's four quadrants of reality, it seems obvious that tacit knowledge is simply the internal and explicit knowledge the external aspect of the one whole of

organisational knowledge. Therefore, just turning tacit knowledge completely into explicit will never work. Yet, "strong and general correlations and interactions" of the two sides do exist (Wilber 1995:133). Therefore, the method is not completely out of value. In fact, turning tacit knowledge into explicit could be compared with taking a photo of the street with moving traffic on it. The picture would only show a framed and two-dimensional image of what the street looked like at the certain moment of time, never what happened a second before or after the photo was taken. Still, when looking at the photo, it is possible to make some overall conclusions about how the street is likely to look like during the longer period of time, as well.

Lyotard: The Philosopher, Lecturer, Writer, and Critic

With this analytical discussion of the modern, symbolic, and postmodernist perspectives of knowledge in mind, the ideas of the influential French postmodern philosopher Jean-Francois Lyotard, expressed in his work "The Postmodern Condition: A Report on Knowledge", can now be examined. The relevance of this particular book for successful management practice in today's fast-changing technical and knowledge based competitive environment is considerable as Lyotard addresses not only the issue of the importance of knowledge, but also the matter of the generation, the contextual nature, and the management of knowledge.

In fact, Lyotard (1984:XXV) wrote the original report, titled *"La Condition Postmoderne: Rapport sur le Savoir"*, for the *Conseil des Universities* of the Government of Quebec, at the request of its President in 1979, with the objective to raise the discussion of knowledge within, what he (1984:XXV) describes as *"the most highly developed societies."* In other words, the report is primarily concerned

with epistemology as it deals with the issue of how knowledge is acquired and generated. This emphasis can easily be recognised, as Letiche (1992:46) argues, since Lyotard attempts to investigate in his book

> "the kinds of knowledge that contemporary universities can possess, teach, develop, defend. He explains What knowledge does the university claims is worth knowing and why? How can the university defend the claim that What is taught is worthwhile? How will the society react to this claim?"

Before examining Lyotard's work, however, it is important to have some background information about him and his scholarly contributions. Lyotard was born in Versailles in 1924 and, according to Serafin (1983:398-399), studied *Husserlian Phenomenology* at the Sorbonne. Following the completion of his studies, Lyotard worked for ten years as a High School teacher, including two years in Constantine, Algeria. Rejecting the harshness of French colonialism, the young teacher became involved in politics, joining the leftist group *Socialisme ou Barbarie* [Socialism or Barbarism], and writing for the radical journal *Pouvoir Ouvrier* [Worker Power]. He eventually claimed academic status while teaching at the Sorbonne between 1959 and 1966, at Nanterre [where he emerged as a leading figure in 'the events of May 68'], and at the University of Paris until 1987. Lyotard, moreover, taught at various German, Canadian, and US universities, as well as having been a researcher at the National Center of Scientific Research, and was the cofounder of the International College of Philosophy in Paris.

His outstanding scholarly career as a lecturer, writer, and critic has been largely based on his numerous written contributions in the field of philosophy. In fact, during five decades of intellectual exertions, Lyotard has expressed his thoughts on most major contemporary philosophical movements such as

existentialism, Marxism, Freudian psychoanalysis, post structuralism, Kantian philosophy, and pragmatism. For instance, whereas in his first work, *"La Phenomenologie"* (published in 1954), Lyotard, according to Craig (1998:8), "analyses phenomenology's radical notion of historicity and the possibilities phenomenology offers for uncovering and moving beyond the limitation of objectivism, subjectivism and idealism," in *"Discourse, Figure"* (published in 1971), he "attacks the structuralist model for language and especially the Lacanian interpretation of Freud as serious restriction and repression of desire." This latter publication also demonstrates Lyotard's shift of emphasis from phenomenology to psychoanalysis. A psychoanalytical approach was likewise used in *"Economie Libidinale"* (published in 1974), in which, as Craig (1998:8) argues, "the dogmatism of Marxist theory in an attempt to uncover the disruptive traces of libidinal drives that resist being systematized within the dialectic and that are signs of the possibility of alternate forms of political practice."

Lyotard's breakthrough to international fame, however, came with the translation of the *"Rapport sur le Savoir"* into English in 1984. Not surprisingly, numerous critiques and interpretations on that particular work have been published since then. This essay, therefore, primarily concentrates on Lyotard's view of knowledge and its management in a postmodern society, while passing over some other main issues discussed in his book.

"The Computerization of Society"

To begin with, Lyotard (1984:3) points out

> "that the status of knowledge is altered as societies enter what is known as the postindustrial age and cultures enter what is known as the postmodern age. This transition has been under way since at least the end of the 1950s,

> which for Europe marks the completion of reconstruction. The pace is faster or slower depending on the country, and within countries it varies according to the sector of activity."

In other words, whereas before, in the industrial age, knowledge referred to the use of tools in the mass production process as well as, in Drucker's (1998:24) words, "to the study of work, the analysis of work, and the engineering of work," in the postindustrial age, knowledge is closely linked to new technological advancements.

Technology, in turn, is based, as Drucker (1998:20-21) points out, on the Greek word *techne*, meaning skills, and *logy*, referring to organised and systematic wisdom. These skills of managing organised and systematic wisdom, as Wilson (1996:20) states, have become particularly significant since the development of electronic based machinery in order to process information.

> 'The nature of work has changed again, just as it did 200 years ago when we moved into the industrial age. Automation and computer control have gradually removed the need for people to do much mindless repetitive work, as machines can do this class of work faster, cheaper and more reliably. More and more jobs now require mental, not manual skills, involving the processing of information and the creation of knowledge."

Lyotard, likewise, recognised the force of advancing technology on knowledge and its influence on the socio-economic and political structures of society. He (1984:4) raises the first point [dealing with technology and knowledge], right at the beginning of his book, where he argues that "these technological transformations can be expected to have a considerable impact on knowledge. Its two principle functions – research and transmission of acquired learning – are already feeling the effects, or will in the future." What Lyotard stresses here is that only that body of knowledge which is translated into information ready to be processed by computers will be maintained whereas that

body of knowledge which fails to undergo this transformation process is most likely to be abandoned.

This transformation of knowledge into data based information for the purpose of research and transmission of acquired learning, in turn, is changing the classical meaning of *Bildung*, the German term for the training of the mind. Whereas before, *Bildung* through educational institutions was seen as the main tool to generate and communicate knowledge, in the postmodernist society, knowledge is emerging as a widely accessible commodity, offered by producers and bought by consumers in a free market environment. Lyotard (1984:4) stresses this aspect clearly when arguing that "knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production."

This reference to production leads to the second point raised by Lyotard when discussing technological advancements, that of knowledge and its influence on society. According to him (1984:5), "knowledge in the form of an information commodity indispensable to productive power is already – perhaps the major – stake in the worldwide competition for power." On the one hand, Lyotard (1984:5) recognises that this development may result in severe international problems between societies, such as widening the gap between developed and developing countries as the productive capacities of the Western world reaches new heights, as well as increasing tensions amongst industrial nations while competing for the control over and access to information resources and commodities.

On the other hand, he stresses the impact of knowledge within highly developed societies. This impact might best be illustrated in the changing composition of the work force, which is currently in a transformation process as less blue colour jobs are available while the amount of white colour positions is

continuously growing. The main change, in Lyotard's (1984:5) opinion, however, is occurring as

> "the notion that learning falls within the purview of the State, as the brain or mind of society, will become more and more outdated with the increasing strength of the opposing principle, according to which society exists and progresses only if the messages circulating within it are rich in information and easy to decode."

In other words, Lyotard foresees the possibility of a severe conflict between economic and state powers concerning the control over and access to knowledge. As an example, he (1984:5-6) points out that multinational corporations, particularly those involved in the telecommunication and finance sectors, make decisions largely indifferent to the powers of the state, and thus, render national borders and authorities meaningless. This development, which Lyotard (1984:7) describes as "the computerization of society", ensures that knowledge emerges as a commodity instead of being the core of *Bildung*.

Hatch (1996:155-157) summarises the central message of Lyotard's argument:

> "That databases are changing the way in which knowledge is acquired, classified, distributed, and used, and these changes are bringing about radical social transformations of the same magnitude as those brought about by previous technological innovations such as modern transportation systems (e.g. train and later air travel which substantially reduced the effects of spatial distance on social relationships) and the media."

Knowledge and the Postmodern Society

Despite these social transformations, Lyotard still sees a central role for the state in the management of knowledge. In fact, in the postmodern society, according to him (1984:14), "economic 'redeployment' in the current phase of capitalism, aided by a shift in techniques and technology, goes hand in hand with a

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change in the function of the State." In other words, the "traditional political class" may continue managing knowledge, but it has to share this task with a public, which increasingly makes use of databases. Regarding the question if the state and its institutions, such as universities, are able to manage this change, Lyotard's (1984:17) answer is clear: "Yes, if the university opens creative workshops; yes, if the cabinet works with prospective scenarios; yes, if the limits of the old institution are displaced."

With regard to universities, Lyotard's emphasis on creative workshops means that students explore knowledge in new arranged forms instead of seeing it merely as a science. According to him (1984:18), this is important since

> "knowledge, [savoir] in general cannot be reduced to science, nor even to learning [connaissance]. Learning is the set of statements which, to the exclusion of all other statements, denote or describe objectives and may be declared true or false. Science is a subset of learning."

In other words, treating knowledge purely as science will limit students' work primarily to "prove the proof" and to decide on "the condition of truth" (Lyotard, 1984:29). This is especially the case since, according to Lyotard (1984:29), science "can only be established within the bonds of a debate that is already scientific in nature, and that there is no other proof that rules are good than the consensus extended to them by the experts."

Instead, Lyotard (1984:33) argues that

> "the great function to be fulfilled by the universities is to 'lay open the whole body of learning and expound both the principles and the foundations of all knowledge.' For 'there is no creative scientific capacity without speculative spirit."

In other words, to benefit from a speculative spirit, students not only have to formulate new arguments within, what Lyotard (1984:43) calls "the established

rules," but also to invent "new rules…[or] a change to a new game" by arranging data in alternative ways. These "moves" or "new propositions," according to Lyotard (1984:43-44), can be achieved while making use of new technologies as "technology is … a game pertaining not to the true, the just, or the beautiful, etc., but to efficiency: a technical 'move' is 'good' when it does better and/or expends less energy than another."

Consequently, Lyotard asks students, as Letiche (1992:46) sees it, to propose variations to the knowledge taught at university and not to repeat what lecturers state. This means that students are encouraged to challenge the knowledge transmitted. Students can do so primarily while making use of new technology to access databases. This second message by Lyotard is, again, well summed up by Hatch (1997:157):

> "The difference between the modern and postmodern, according to Lyotard, is created by the advent of the (near) perfect information that computer technology provides society. With perfect information, there is no advantage to be gained from obtaining more information, advantage can only come from arranging data in new ways."

Conclusion

The modernist, symbolic, and postmodernist approach were discussed in this essay, while emphasising that each of them adds a constituent part in our understanding of knowledge. The concept of the four quadrants, introduced by Wilber (1995), however, reveals the narrowness of each of the three philosophical perspectives when taken separately. While modernists' concentration on the external and symbolists' focusing on the internal half are obvious, the mistake of the postmodern view (at least in its currently young phase) appears to be seeing the

individual (i.e. partial or fragmented) half of the reality. Hence, it is hereby suggested that, when managing knowledge in organisations, all four aspects of it need to be considered in full, in order to succeed.

These findings, naturally, limits Lyotard's argument as a postmodernist thinker. Nonetheless, the French philosopher's ideas have been influential on, and enriching to, organisational theory. New technologies in form of computers, in his view, allow the redefinition of knowledge. This does not imply to gain more knowledge while obtaining more information, rather to rearrange existing information in new ways to acquire new quality of knowledge. To achieve this, Lyotard particularly encourages students at universities to imagine and offer new variations on existing knowledge.

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