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INTERNATIONAL SOCIETY FOR KNOWLEDGE ORGANIZATION

LET THE NEW KNOWLEDGE COME: ATLAS OF KNOWLEDGES

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ABSTRACT

Knowledge is dynamic; it changes constantly; sources of knowledge are to be found everywhere; the exploration of these sources brings about new insights, understandings … knowledges. The supplication of Michel Serres: *Let the new knowledge come,* is expressed against the background of an awareness of the sterility and boredom of the generally accepted views of knowledge. New knowledge very often emerges due to new and different combinations, combinations between disciplines, subject fields, and scientists. These links, connections and combinations must be established by knowledge workers and knowledge communities. The urge for new knowledge is at the same time an urge for a new way of thinking about knowledge and its meaning for humans and societies, keen to indulge in a search for new knowledge beyond the currently accepted methodologies.

KEYWORDS:
New knowledge, atlas of knowledges, world-mapping, knowledge space, trees of knowledges

1. INTRODUCTION

When Michel Serres (1989a: 177) writes: 'Let the new knowledge come', it was almost like a prayer. It sounds like a great expectation on the one hand, and like a sigh of discontent with regard to its opposite, let us call it 'old knowledge', on the other hand. Is this really the case? Are we operating with old knowledge, inappropriate knowledge and inadequate knowledge? Is the hope for new knowledge a realistic hope, a futile exercise, or already a reality? Too many scientific discourses suggest the last option as really the case. What are the limitations of the old knowledge and the possibilities of the new knowledge? Under what theoretical and methodological conditions can we expect knowledge, old or new, to emerge? It is fairly clear that they require different conditions, different in terms of assumptions, methods, and mode of thinking.

What is to be done? To my mind there is only one option: we have to position ourselves in the heart and at the core of the current multiple discourses on information as a central societal issue. All these discursive activities take information seriously. We simply have to demonstrate that we are aware of this and understand it properly and deeply by participating in debates. To us it is a given, in view of our historical place within the disciplines, and a responsibility to take this given position seriously, profit from it and make thoughtful contributions. What is lacking in all these discourses? Precisely what we can offer and indeed have offered for many years and decades: organization, retrieval, classification, abstracting, interpretation (value adding), dissemination, utilization, etc. of knowledge and information. We are the only ones qualified and able to make these contributions, and to make it in order to facilitate significant and constructive work in all possible knowledge areas. In order to do so it will be of crucial importance for us to articulate what we are able of doing in such a way that our contributions will appeal to and be useful to others.

In other words, the justification of many research projects is to be motivated and should be motivated on other and radically different levels from that on which empiricist and positivistic researchers operate **and on which** they unconditionally insist. This article argues in favour of this other fully legitimate level of activity and motivation which must deliberately be put outside the field of **operations**. Is scientific work justifiable in any other tenus or along any other routes than the one of problem formulation and potential solutions? Is this the only route and why in case it is? Is the so-called problem not enormously inhibiting, limiting, done in terms of personal interests, prescriptive, and prejudicial? Who is anyhow able to formulate a problem outside these restrictions? Anyone who drops the shackles of the dogmatic image of thought. This image of thought clings to problems, methods and solutions. We have to move beyond the level of the dogmatic and onto the level of the valuable in order to achieve an understanding of alternative ways of pursuing knowledge and doing science than the traditionally accepted ways, ways of value, insight. wisdom and invention. In this regard the following three publications are of immense importance: *Between time and eternity: the new place of the human being in natural science* (Prigogine & Stengers 1989); *The*

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uncertain quest: science, technology, and development (Salomon, et al. 1994). and *Thinking science or the issues of knowledge* (D'Espagnat 1990). It seems clear that much more room should be made for thoughtful free reflection on what is given, which may eventually prove to be certainly a much more fruitful and rewarding exercise and practice. (Cf Bourdieu, 2001, in this regard). In this case not method but a 'beyond method', not solutions but inventions, and not problems but a situations are required. Values are brought into the picture and so is freedom.

The objectives of the research is not as simple as the solving of a problem. It is much more and much rather a matter of taking care of the future of our profession and of future knowledge workers. It remains with us to work out a space, not only for ourselves, but for them as well. And this caretaking is, moreover, not merely a matter of keeping a profession going and moving forward, but of making society going and moving forward. No progress of a kind can be expected without a comprehensive understanding of knowledge as well as of knowledge work in terms of a new and different idiom.

In order to facilitate this new approach we have to take a close look at the main requirements for a professional regarding the knowledge issue in particular. Mason (1990) offers excellent guidelines in this respect. He writes: 'Information professionals possess specialized knowledge about knowledge itself which they use to improve the intellectual state of people. Information professionals empower their clients to understand and to know. ... This empowering information... consists of the signs and symbols that one mind uses to influence another mind... . Information professionals are the people who carry out this process of influence on the mind. To be more precise, information professionals are mediators between one mind ... and another mind...' (Mason 1990: 123-124). This approach gives depth, suppleness, variety, substance and practicality, room for movement and invention, to our profession. The development of such a disposition as suggested here will be in compliance with the dynamics of the field. What is meant by the dynamics of the field? At least that no rigid or inflexible approach would be able to deal with this dynamics. In a more positive tone, it has to be emphasized that flexibility and suppleness in thinking and an accommodating spirit with reference to multiple viewpoints we do encounter in a dynamic field.

We must be careful not to allow our workplace to out-develop us but we have to remain in step. We simply have to keep track and pace in an intelligent way with the developments, theoretical and practical, in and around our workplace and related to our workplace. This implies thorough rethinking of knowledge and information along new and completely different lines. Knowledge work cannot be pursued without such new explorations and reflections. It will be useful to make use of an example. One of the most brilliant examples in terms of a conception of knowledge and a comprehensive understanding of the place of knowledge and its dissemination in and usefulness for society is most certainly the work done over many years by the French thinker Michel Serres. His notion of 'the atlas of knowledges' offers a unique and significant point of

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departure for our discussions.

2. IN PURSUIT OF A NEW CONCEPTION OF KNOWLEDGE

With this paper I want to do different things at the same time: introduce the philosophy of knowledge of Michel Serres and why it deserves more reading than it receives; against this background show that knowledge is a much more complex issue than our research endeavours and institutions, and more recently 'knowledge management companies' try to make out; that all forms of knowledge are to be taken seriously; that humans, us, are challenged to be inventively involved with the issue of knowledge; that knowledge (and not any deformations of it, and also not its disfigurement by powers like rhetoric, or political systems and ideologies. or colonizations. or decolonizations, nor even the market), and knowledge only, is the issue that can take us (the human race and human societies) forward in any sensible way; and the last issue will be to emphasise these matters in such a way that it will form food for thought and further discussions.

The implication of the title as well as the contents, although not fully spelled out, demonstrate another form of globalization, forced on us from pure theory, as well as *information* technology and not information *technology*. The actor/network theory inspired by Michel Serres, the grounds of which were well articulated already in 1968 *(La communication)* as well as his core oeuvre rotating around the Hermes figure, and his never-ending involvement with and indulgement in information, are all demonstrations of unlimited scope, the transgression of boundaries, the mobility of the nomad. Another perspective, much more constructive and much less threatening than the economic/market version of globalization emerge in this view. This input is, however, not without intersection with the other one. As a matter of fact a great deal they have in common are there links to electronic media. We should never forget that the theoretical perspectives developed with global implications were not in its initial stages inspired or supported by electronic media. As a latecomer to the scene it indeed reinforces, activate and intensifies these theoretical views immensely. One of the more recent publications by Serres, *The legends of the Angels,* is a particularly relevant publication in this regard.

Reading Michel Serres is like visiting paradise – the garden of Eden – I imagine. Scintillating. jubilating. sparkling, surprising, adventurous, unknown, enriching. playful, harmonious. Reading on or about him leaves one easily with this kind of experience. There is a freshness and a sparkle which reminds of the cleanest air one can find high up in the huge mountains of the world. After I said to myself: This is how I experience the writings of Michel Serres, I read what Pierssens (1979: 102) writes: 'To read Serres means to rest on a window pane in order to discover an immense horizon, the inexhaustible of the present; it means to receive, with one blow, the wind of a thousand hurricanes which leaves everything uncertain: the certainties of fiction, the reveries of

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science, the neatly argued pathos of philosophy.' Or, as somebody else writes: 'Serres is not an aesthete, but an artist of philosophy. Integrity of this beautiful art, gravity of this dance, aesthetics and logic make a complete circle' (Debray 1979: 18). In this capacity he revolutionizes our conception of knowledge by linking it to all possible other discourses. In this regard he is not alone but certainly gives his own stamp and flavour to the process of revolutionizing knowledge.

Another *way* of making the same point is a reminder of Merleau – Ponty who once wrote: 'Meaning is like spots of light surrounded by rugged clouds of night, glowing islands.' Michel Serres' oeuvre is remarkable since it tries to link these spots of light – these islands – as well as the rugged clouds of night in a harmonious *way:* The web of meaning which can neither nihilistically deny light, but at the same time, in terms of which it cannot apocalyptically be pretended that all we see is light and that there is no darkness. The recent debates about chaos, order and complexity are relevant here. His Hermes philosophy (he published five books in his Hermes series) is about this. 'One of the most beautiful things that our era is teaching us is to approach with light and simplicity the very complex things previously believed to be the result of chance, of noise, of chaos, in their ancient sense of the word. Hermes, the messenger, first brings light to texts and signs that are 'hermetic', that is, obscure. A message comes through while battling against the background noise. Likewise, Hermes, traverses the noise, toward meaning' (Serres 1995b:65-66).

Some additional views, along similar lines, which make the self-sufficiency of our generally accepted views on knowledge ludicrous and highly questionable and therefore risky, are the following:

Jean-Francois Lyotard (1988:28), the philosopher, writes in *Peregrinations* about the importance of doing away with 'the delusion of consistency' (the attitude reflected in the so-called 'old knowledge') without shying away from the complexity of things. He writes: 'It is time to complicate a bit our approach by opening up gaps inside what is certainly a too thick cloud of thought in order to do away with the delusion of consistency and to make ourselves receptive again to more intricate events.'

Hundertwasser, the artist, is even more explicit: 'In 1953 I realized that the straight line leads to the downfall of mankind. But the straight line has become an absolute tyranny. The straight line is something cowardly drawn with a rule, without thought or feeling; it is the line which does not exist in nature. And that line is the rotten foundation of our doomed civilization. Even if there are places where it is recognized that this line is rapidly leading to perdition. its course continues to be plotted... . Any design undertaken with the straight line will be stillborn. Today we are witnessing the triumph of rationalist know-how and yet, at the same time, we find ourselves confronted with emptiness. An aesthetic void, desert of uniformity, criminal sterility, loss of creative power. Even creativity is prefabricated. We have become impotent. We are no longer able to create. That is our real illiteracy' (Hundertwasser, as quoted by Peitgen &

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Richter 1986:v) .

Mandelbrot (1982:12), the geometrician, puts the same problem in a very clinical *way* in perspective when he writes: 'Why is geometry often described as cold and dry? One reason lies in its inability to describe the shape of a cloud, a mountain, a coastline, or a tree. Clouds are not spheres, mountains are not cones, coastlines are not circles, and bark is not smooth, nor does lightning travel in a straight line... . Nature exhibits not simply a higher degree but an altogether different level of complexity. The number of distinct scales of length of patterns for all purposes infinite. The existence of these patterns challenges us to study those forms that Euclid leaves aside as being formless, to investigate the morphology of the amorphous. Mathematicians have disdained this challenge, however, and have increasingly chosen to flee from nature by devising theories unrelated to anything we can see or feel.'

A fairly recent publication and exhibition in Paris on *'Measurement and the unmeasurable'* demonstrates in various ways to what extent the measurable is not reliable and that our decisions, even scientific ones, are very often affected and directed by what cannot be measured. We should never be tempted to confuse knowledge with the measurement of knowledge. These two entities, although they are somewhat linked, are also incompatible.

These views are cutting deep into the heart of our knowledge culture, and consequently our information culture and calls for drastic revision, rearticulation, and rethinking. This is exactly what Michel Serres has been doing for the past 30 years years and is still working on currently. His works are, each of them in its own *way,* an effort, and a very successful effort, to articulate precisely these issues related to a new knowledge culture (cf for example the book by Assad (1999) in which she offers lively interpretations of and comments on some of his books).

Three general and very dominant features of his project of thinking that have an impact on all his other themes should be mentioned and eventually explored somewhat as well: he is an **acritical** philosopher; he is also a philosopher of **networks** and **invention**. These three outstanding characteristics of his thinking determines the mode of his oeuvre. Each work stands in the light of an acritical inventiveness. Networks are enabling factors for inventions. This makes of his thinking something drastically different from the enlightenment philosophy.

3. WORLD-MAPPING KNOWLEDGE

These views introduce to us the idea of a road map for knowledges (cf the impressive book he edited on *Elements of the History of science*(1989c). This is the idea of giving or working on a comprehensive, all-inclusive map of the world of knowledge, which is at stake here.

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The history of the thinking of Michel Serres is a history of wrestling with the issue of knowledge. All his books rotate around this theme and each one of them elaborates and highlights a particular perspective of this issue. Themes addressed by his many books on themes like communication, translation, interference, distribution, passage, statue, five senses, genesis, detachment, hennaphrodite, Rome, Atlas, and more are all weaved around this formidable theme, so totally indispensable for the human race and at issue since the beginning of human history. Compare the history of religions and cultures and the role knowledge played all the time in all these cultural traditions. Knowledge and its importance for human life and existence is no new invention, least of all an invention of the sciences or of the marketplace. It is certainly not suddenly an important theme because it is surprisingly included in the rhetoric, vocabulary, and marketing strategies of big companies, or finds a strategic place in organizational politics, or in business and management contexts where it has never been a prominent issue before.

Serres' deep, honest authentic urge at the end of his book, *Detachment,* namely 'let the new knowledge come' is eventually culminating in the statement in one of his more recent books, *Atlas,* in the following terms: 'We should no longer run after a knowledge universe, but pursue the multiplicity of possible knowledge worlds'. In this book he unravels the zig-zag tours and detours leading to an illuminating enlightening focus point where all routes converge and come together in a single knot – harmonious, significant, and meaningful This knot constantly requires to be untied. In his reflections on knowledge, information is never far behind and never left out of the picture. As a matter of fact it finds a very special place. Serres can indeed be called one of the most productive, imaginative and inventive philosophers of information. The implications will hopefully become clearer as we go on.

We need an atlas to guide us through landscapes, countries, etc. Without it we will easily get lost. Equally important is an atlas for the landscape of knowledge, and its place in culture and society. Hence, his exercise in mapping the world of knowledge as comprehensively as possible. Knowledge as map or atlas is needed in a much more comprehensive sense than merely for purposes of physical moving around. Knowledge is the issue that enable us to find our ways and directions through life. It is indispensable for us as living beings.

Atlas represents a more comprehensive and open-ended notion than *encyclopaedia,* which is closed and finite. This rethinking of knowledge in new terms is made necessary by the development of a new conception of knowledge, which emerged during the past number of decades, with vast implications for the creation, dissemination, transmission, and utilization of knowledge for the well being of individuals and society. These new developments also pose serious new challenges for the activity of thinking, the fantasia of thinking, and the pursuit of science in the sense of nomad science. Gilles Deleuze is a key thinker in these matters who incidentally had close connections with Serres.

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Serres (1995a:276) prefers to speak of 'a multiplicity of possible knowledge worlds', rather than the classical 'knowledge universe', and that for very self-evident reasons. These reasons became prominent in solid theoretical terms but also supported by developments in the area of electronic media which certainly facilitate these new developments. Hereby human thinking is confronted with dramatic challenges. In a similar way as our talking of networks of roads (represented by the idea of atlas) we can speak of networks in a more abstract sense, referring to the links between knowledges, institutions, insights and many more related issues.

4. KNOWLEDGE AND INFORMATION SPACE

Serres developed at an early stage his theory of networks of communication *(La communication)*, which offers in itself a model of communication more adequate and significant than the linear model of Shannon and Weaver. This theory can be made fruitful for other linkages as well, very useful from the point of view of knowledge usage. We can easily detect from what has already been stated that the notion of space, real and/or virtual is selfevidently suggested. Atlas, maps, networks are all spatial terms. Knowledge space and information space will become crucial issues in this regard, and very importantly so, as a space to be inhabited!

Real space implies the following: Does there exist a road of which one could indicate the exact departure point and point of destination? Virtual space on the contrary entails the following: if Hermes carries his messages only to a unique sender ..., while Leibniz, like the Angels, describes the passages from whatever place towards the universe, or from this global point to such sojourn by virtual intermediaries, it becomes perfectly clear from where the idea to design these sheaves in worldmaps, in an Atlas, originated. His whole oeuvre rotates around this theme: communication between the sciences, between knowledges, between the sciences and societies, and movement in all directions. For this reason the notion of space is important as well as mapping knowledges in this space. A brief look at his works will illustrate this somehow. At the same time this way of articulating knowledges emphasizes self-evidently the idea of a new knowledge that is not a given but should be pursued.

Serres' notion of communication involves transfers from one science to another, or from the purest science to philosophy and even poetry. Communication traverses these spaces that would be much less clear and transparent than one would have believed. The titles of many of his books, like communication, interference, distribution, translation, North-West passages, lighthouses and fog horns suggest movement from place to place. Not things and operations but relations and rapports are what he is concerned about. A reading of his books may seem difficult since it is all the time a matter of changes and moves. This changing and these transformations and these wanderings either follow or invent the path of a relation, relations between the sciences, between knowledges, between humans and knowledges.

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When one reviews them it will be possible to retrace easily how he passed from mathematics to physics, from physics to the life sciences and to the human sciences, without ever leaving behind its historical component. But these movements do not make up a seamless list which occuppies a flat space. They suggest a hilly landscape, ondular pathways – chaotic and fractal, much closer to reality. Besides utilizing concepts by which he wants to facilitate movement and communication in a successful way he also uses characters which find expression in some of the titles of his books as well. Some of these characters are: Herrnes, Parasite, Hermaphrodite, Harlequin, Troubadour of knowledge. In these books where he meditates on successful communication, the difficulties, obstacles, and conditions pertaining to transformations, movements, communications and translations are laid down in detail and make for fascinating and exhilirating reading.

A brief illustration about how Michel Serres in his books tries to establish relations between disciplines, but also between ideas and relations as conditions of our knowledge creations and the world in which we live and which we create in some way should be sufficient. This may help us to understand a bit better the idea of the atlas of knowledges, the idea of the urgency of a new conception of knowledge, and why a comprehensive worldmapping of knowledges is required. How sociology is situated in astronomy (the two most distant sciences in terms of positivism's classification) is discussed in his *The origins of geometry*. How politics is situated in physics is the great question of *The natural contract.* How technology and physics are both situated in an anthropology of death is the main concern of *Statues.* The possibility of fitting together information theory, parasitology and table manners is discussed in *The Parasite.* In his book on Zola *(Lighthouses and fog horns)* he situates thermodynamics with genetics and both of them with the history of religion. The question he tries to answer in *Hermaphrodite* is how it is possible to link the symmetry/assymetry of left and right, of orientation and of sense, in the physical and in the human sense of the word? These passages between the disciplines or sciences are explored in a very specific sense in *The North-West passage* and strongly recommended for teaching in *The troubadour of knowledge.* Nothing can be more relevant for knowledge and information workers – we simply have to undertake these journeys and do that on a continuous basis. This is a demanding challenge, but hardly anything can be more rewarding at the same time.

5. TREES OF KNOWLEDGES

The very rich and productive insights of Michel Serres, as discussed up till now, are in a very significant way 'operationalized' by Authier and Lévy (1996). They do it under the theme of 'trees of knowledges'. According to them the knowledge system should be dealt with in terms of its principles as well as its effects. A discussion of their insights will demonstrate to us to what extent they have fruitfully applied the philosophic insights of Serres in an economic and business sense.

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The knowledge tree was conceived and implemented to virtualise our relation to knowledge and skill. It enables both groups and individuals to identify and orient themselves within a universe of knowledge in flux. The knowledge tree provides a means for grammatizing the recognition of knowledge. The elementary particles of recognition, brevets (or signs of competencies). are not fully meaningful in themselves, but only as part of a blazon (or the image of individuals), a group of brevets (or curricula) obtained by an individual and displayed on the knowledge tree (or community of knowledge). A set of brevets can be used to construct an indefinite number of different skill paths. The same individual curriculum assumes different significance and value depending on the community in which the tree appears.

We thus obtain a system structured around two sets of relations: first, that between individual brevets and curricula (similar to the relationship between phonemes and words), and second, that between the curricula and the tree. A tree is formed from the different skill paths of the members of a community and structures them in turn in the form of blazons. (This is similar to the relationship between words and sentences – the sentence consists of words of indeterminate semantic value and actualizes the meaning of the words it comprises.)

Initially, any brevet, more or less, can be integrated into any curriculum, and any curriculum, although with varying results, can be included on any tree. The brevet is the mobile characteristic for the identification of knowledge. This bilateral grammatical function is the connection that makes possible the standardization, deterritorialization, and virtualization of recognized knowledge. A kind of skill-signalling phoneme, the brevet represents a virtual particle of skill. It is, therefore, essential that it be stereotyped and independent of any particular individual, place, or educational programme. The blazon that appears on the knowledge tree expresses an individual's competencies in a given context. It provides an image – always singular – of the actualization of a person's skills in a given situation.

Such an approach is rational and practical. It enables us to resolve a number of problems, which are both urgent and concrete. And yet it smacks of heresy, for the same reason that it is novel: the recognition of skills is completely disconnected from any particular assumption about the order of knowledge. The various ways of classifying knowledge, visualized by means of the tree, are the result of the different approaches to apprenticeship taken by different communities. Something has been set free.

Intelligence incorporates a collective dimension: it is not only languages, and institutions that think in us, but the whole of the human world, with its lines of desire, affective polarities, hybrid mental machines, and landscapes of meaning paved with images. To act on one's environment, no matter how slightly, even on a purely technological material or physical level means that we erect a shared world that thinks differently in each of us, indirectly secrete some subjective quality, work in and with affect. By living, acting, and thinking, we weave the very fabric of the life of others. For

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this reason human communities can be said to be intelligent in a collective sense. A common space is created where the effects of these ideas on individuals, on enterprises and employers in general, and on teachers and educationalists are immense towards the creation of a new civility (see Authier & Lévy 1996).

Collective intelligence thinks in us. We can take individual pleasure in the collective intelligence, which enhances and modifies our own intelligence but at the same time enhances the creation of intelligent communities.

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