A new concept of knowledge 📝

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Abstract

At this time, not all of the versions and definitions of the concept of knowledge have been compiled within the scope of science. It is not the object of knowledge but rather the subject that knows, or in other words, the cognitive ability of the subject The process is as follows: to produce information, and on the basis of that information, to produce knowledge, and on the basis of that knowledge, wisdom. In the context of globalisation of information, the memory was the method of knowing. The organisation, processing and retrieval of information tend to take on a structure and design according to the information-processing model of the human mind. This discontinuity is made up of the new forms of artificial knowledge and artificial wisdom. The pillars of the new society of knowledge are settling on the basis of productivity and utility, and this has turned knowledge into nothing more than productive information.

Preambles to the traditional concept of knowledge

At the turn of the millennium, a shift took place which, coupled with a change in civilisation, led to the implantation and dissemination of new forms of information technology. We are entering into a digital information society and age, which implies a new global era of information, also referred to as the era of knowledge. This change will have an effect on the new fields and disciplines emerging within the speciality of library and information science, the concepts of which are reviewed below.

The definition of the term "knowledge", as it is understood at present, is recorded within our cultural references and has its primal origin in our forms and types of script. The very origin of our writing system comes from the need to control agriculture, such as changes made in the flooding of the rivers Nile, Tigris and Euphrates, which gave our writing system a controlling, domineering dimension with respect to the peoples and cultures that lack such a system. The transfer of this process has very much been decisive in creating the dichotomy of dominated peoples and dominant peoples. In the same way, the type of alphabet also determines social structures and thought frameworks. Hence, the phonetic alphabet gave rise to the de-tribalisation of the ancient world, or more specifically of classical Greece, causing the dissolution of the tribal state, which worked like a biological unit, unlike modern societies, which revolve around a concept as abstract as exchange of any type. According to McLuhan, the opening up of tribal societies was due to the phonetic alphabet, or in other words, the domination of that which is visual over that which is heard, or written language over oral language, leading to the advancement of the magic of myth to thought, or *logos*. The tribal, communal, African, magical, auditory world is a more aesthetic, warm world which is at odds with an open, individualist, Western, rational, visual world that is colder and more neutral (McLuhan, 1985, p. 38). Illiterate peoples live in a world of sounds, unlike Westerners and Europeans, who live in a visual world. Because of this, oral worlds have life,

strength, magic and dynamic energy, as compared with visual or written words, which have meaning, significance and status. This dichotomy gives rise to oral-aural cultures as opposed to visual ones.

The phonetic alphabet also dissociates image and sound, making the sound of letters abstract and taking all meaning away from them. There are, therefore, meaningless letters and sounds (in ice cream or in cheese, some of the "e"s have no sound, or the different sounds of j in jar, g in gel and g in gate, which lack meaning). Therefore, the symbols and sounds are left incomplete, because vision and hearing are sometimes dissociated, so there are attempts to give a greater phonetic character to our writing (for instance, Spanish is of a more phonetic nature than the English language, even though it is not completely phonetic). Western civilisation has been constructed with the meaningless symbol and the meaningless sound (McLuhan, 1985, p. 83). The shift from aural to oral man was caused by an overstimulation of certain senses such as sight, which led inexorably to a decrease in the other senses. For Western Man, visual values have had priority in the organisation of his thought, unlike the organisation of knowledge by tribal societies, where auditory values have prevailed (Lèvi-Strauss, 1970). The technology of the alphabet has led to a weakening of the senses. The phonetic alphabet reduces the simultaneous use of all the senses; in other words, the spoken expression is a mere visual code (McLuhan, 1985, p. 76). The culture of the manuscript was audio-tactile, compared with our audio-visual culture. It is the medium of transmission itself which gives structure to reality.

The development of the traditional concept of knowledge

On the basis of these preambles which condition current thought, we can see that thinkers and philosophers in ancient times had, as a common objective, the acquisition of knowledge of total reality by means of the phonetic alphabet and the predomination of the visual. With the pre-Socratic philosophers, wisdom and science are born, and knowledge is approached as the knowledge of a whole. The problem or

problems surrounding knowledge were traditionally tackled by a great number of philosophers. In ancient Greece, the problem about what knowledge is was confronted in close relation with the issue of what reality is, so the terms wisdom, science and epistome were used on the one hand and knowledge and logos on the other.

Western mediaeval philosophy confronted this problem and was greatly influenced by religious thought, from the possibility or impossibility of knowledge and also the types of knowledge. The need for experimentation started during the Renaissance, with the emergence of two sides to this problem; one which was experimental and artisan-based and another which was more theoretical and speculative. It was in the modern era that this problem was confronted as a central topic to be discussed by Descartes, Malebranche, Leibniz, Locke, Hume and others, for whom the central problem was the method and structure of gaining knowledge. From Kant onwards, the problem of knowledge acquired the rank of a philosophical discipline or a "theory of knowledge". While the Greek world revolved around man, the modern world, beginning with Kant, is centred on wisdom (Ferrater, 1971, pp. 338-44). In the nineteenth century, with the scientific-technical revolution, many new forms of knowledge of a practical nature were to emerge. At present, the perspective of wisdom immersed in multi-faceted forms of knowledge of a practical type is the priority. The classical questions about what knowledge is, or how it is possible, are framed within a philosophical discipline that has been given many different names, for instance: theory of knowledge, critique of knowledge, gnostics and epistemology, which approach the viewpoint of human knowledge as scientific. Therefore, human knowledge has been tarnished by the imposition of scientific knowledge, which has marginalised other existing, very important forms of knowledge, such as art, in which intuition, imagination, flexibility, originality, premonition, creativity and other qualities are used to produce a specific form of knowledge. Nevertheless, as has been claimed by Amat (1990, p. 55), "another of the consequences of scientific imperialism has been to establish the art or arts as a form of subterfuge in favour of entertainment, while showing little esteem for the creative aspects of them". Thus, intuitive,

imaginative, creative knowledge does not comprise the basic model for the creation of current artificial knowledge, insofar as it is derived from the human model of knowledge.

Differences and similarities between the concept of information and the concept of knowledge

Etymologically speaking, the concept of information comes from the Greek word "form", so in-form is to give form or structure to a matter, energy or relationship. Therefore, information serves to give form or to place the recipient in a new state.

The range of definitions of "information" within the scope of the sciences that have affected library and information science is very wide. Authors such as Wellish (cited in Sanz, 1994)) cite 39 definitions of the term "information". Ruben (1990) also points out a diversity of definitions of "information", including: economic product; consequence of action, code or model; data or documents; decisionmaking or problemsolving; entropy; meaning assigned to databases; messages; news; physical form of property; process information; processing of sensory data; product for usage; product of social interaction; regulation and control; representation of understood knowledge; resource; service; symbol used in communication; stimulus; formal knowledge; learning; connection between living organisms and their surroundings; structure and organisation; symbols; technology, media and transmission; joint proof of internationally structured symbols; thought, recognition and memory; uncertainty, choice or restriction of alternatives.

On the basis of any of these definitions, the concept of knowledge that results will be different. Moreover, at this time, not all of the versions and definitions of the concept of knowledge have been compiled within the scope of science. This multiplicity of ways of conceiving information will also lead to a multiplicity of ways of conceiving knowledge. And we can even see that "for many authors, it is extremely difficult to distinguish between information and knowledge. It can be said that knowledge consists of ordered and structured information ... In order for information to be turned into knowledge, there must be a presence of pre-existing structures of understanding in the memory, which are capable of retaining certain information so that it can come to form part of the knowledge of a person" (Sanz, 1994, p. 21).

Knowledge and information are two totally different concepts that now seem, quite frequently, to be presented as synonyms. Knowledge is internalised information. In other words, it is integrated within the person's cognitive structures. If there is no person, there can in no case be knowledge. This knowledge is not acquired simply by access to bibliographical or documentary references or to metadata through the Internet. In short, access to information on information or on information itself is far from being called knowledge according to our tradition. However, international networks of electronic information and satellite systems, in an attempt to reach total interconnection, will lead to great technological development. This will mean great transformation in everyday life, together with intent to shorten distances and time, which will entail new ways of conceiving our immediate reality. "To sum up, new information technologies open the path to a new way of conceiving culture, to an ulterior dimension of knowledge, which for the time being is ungovernable and incalculable and has economic and social effects that have not yet been determined at the global level" (González Manet, 1999, p. 8).

A new concept of knowledge

Therefore, what in our cultural tradition has been considered as knowledge, will be transformed and conditioned not only by new definitions of the term "information", but also by the obvious influence of the English-speaking world and the total impregnation of information technologies.

Vizcaya Alonso (1997, p. 156) defines knowledge as a "process by virtue of which reality is reflected and produced in human thought. Said process is conditioned by the laws of social occurrences and is inseparably united to practical activity". In our current electronic era, which follows the typographical era that lasted throughout the last five centuries, new forms of human thought will be produced, along with new forms of interdependence and structuring of

knowledge. These will give rise to new modes of knowledge. Knowledge was, in principle, an intellectual activity that was also the product of cognitive conscience, and in the end, it is the result of productive information.

There are many authors who advocate a new way of conceiving knowledge, such as Amat (1990, p. 25), who nevertheless believes that there is a lack of balance between the vehicles of information and their content. She states that turning information into knowledge is a creative skill of our era, because it involves discovering forms and models that make it possible to penetrate into abundance instead of increasing it. It deals, therefore, with designing ways to enlighten instead of searching through information technologies because, if memory is no longer human but belongs to databases or machines, knowledge conceived in this manner will be articulated by machines. To sum up, this new viewpoint states that knowledge can be produced on the basis of either the data stored in memory or the data saved in artificial memory (Lancaster, 1996). This differentiation of knowledge produced in two ways, through human memory and artificial memory, is what leads to the two concepts of knowledge: symbolic and figurative.

Information as a process of knowing creates symbolic knowledge
If the theory of the development of knowledge formulated by Piaget is applied, we can observe that information can be seen from two points of view: as a process of knowledge or as a pre-codified fact (Amat, 1990). Information as a process of knowledge has an operational aspect, which is the act of knowing or obtaining wisdom. It is not the object of knowledge but rather the subject that knows, or in other words, the cognitive ability of the subject. This knowledge is that which belongs to literary production and scientific information and depends on the abilities of the individual to assimilate symbolic knowledge. The origin of this operational aspect lies only within the individual himself. Piaget emphasises on this point that not only does the figurative aspect play a role, but the medium, material, symbol or language are also converted into meanings when understanding or an operational interpretation takes place by a subject who knows, and the subject that knows produces symbolic knowledge.

Information as codified or ordered knowledge creates figurative knowledge
At the same time, mere information is only a set of isolated data or facts, and knowledge involves ordering or associating them within a pre-existing framework within human understanding (McHale, 1981, p. 16). Man, in order to produce knowledge, uses his maximum intellectual capacities, whereas, in order to produce information, not such a high level of processing need take place (Amat, 1990, p. 31). The process is as follows: to produce information, and on the basis of that information, to produce knowledge, and on the basis of that knowledge, wisdom.

Knowledge as a codified fact requires that information be something merely figurative that is stored, processed and retrieved, in its figurative aspect, though the origin of that information lies in the very knowledge of a person. The codified fact or figurative aspect of knowledge always makes reference to verbal symbols, or language. Therefore, this medium cannot produce knowledge without symbols or a verbal message. The concept of figurative knowledge can be applied to the three functions of the documentary process: to the selection, the processing and the retrieval of information using techniques and technologies for processing information. The origin of the figurative facet lies outside of the individual. It involves facilitating operative knowledge or the creative result or scientific knowledge and facilitating certain documentation which may be used. It is on the basis of figurative knowledge that we obtain productive knowledge.

Information designed through electronic forms of technology creates productive knowledge
Wertheimer (1945) called human knowledge productive thought, but the advancements of electronic information technologies and productive information have also transformed this knowledge. Given that information technologies, as such, are the material basis for the storage and processing of information, they constitute the foundations of knowledge that would be created if human specialists played the same role. This new information produced by way of artificial intelligence will be referred to as knowledge, or in other words, productive knowledge. Knowledge shall therefore be that which is not seen and lies underneath information, that which

appears through various technical processes, either through maps of contents in a database or in an ensemble of organised information, or through metadata, or through references to the very data or information.

The traditional classifications of the sciences have resulted in modern classification systems. Given the context of globalisation of information, a similar process will take place with the electronic processing of the organisation and representation of traditional or natural knowledge. Knowledge can therefore be described at present as a type of artificial knowledge, or as useful electronic information, or as potential information from a pragmatic perspective. If we also bear in mind the quadrivium of data, information, knowledge and wisdom, we will have, in the end, incorporated a concept into this process that will also be modified: wisdom.

Wisdom as the ability to remember and find information

Finally, we have the modified concept of wisdom. Bergson said that having wisdom is remembering, which could be applied here by stating that wisdom is knowing how to look for something. Wisdom is also associated with what books say. However, the original idea of wisdom, as McLuhan (1985) added, was astuteness, wisdom and daring.

For Foucault (1985), in *The Archaeology of Knowledge*, wisdom itself is the description of history, the collective, age-old memory that has been left behind in various forms such as books, texts, stories and techniques that make it possible to retrieve memories and to facilitate the latent mark or vestige of the human subject itself. However, once the subject and the object have been constituted, the history of ideas reverts once again to documents and they are reinterpreted, their vitality, autonomy, discourse and speech are returned; an isolated document is a mute monument. Foucault intends somehow to exclude the author. The psychoanalytical schools would also treat the isolated text as a mute moment, in which the human subject provides reading with meaning, creating a chain of meanings, in which the subject is imbued with and traversed by the text.

Wisdom, insofar as it is a description of history and the collective memory, has been defined as the representation of all knowledge.

To have wisdom is to remember, as Piaget said, "When one learns, one does not have wisdom, one understands; it is thanks to memory that one has wisdom." The act of having knowledge, the act of having wisdom, the act of being creative or the act of having wisdom through memory, implies that there is creative intelligence, because the creative memory, which due to its organisational form is different from other memories, does not depend entirely on wisdom.

Memory has always been fundamentally natural. Now it is also artificial and technological. Today, both are a method of knowing. Wisdom, in our oral thought tradition, lay only in the human memory, because there were no physical media, and wisdom therefore depended upon the training and art of memory (Amat, 1990, p. 37). Memory was the method of knowing. Now we will have another method of knowledge based on an artificial technological kind of memory.

When our body or our genes were no longer capable of storing all the information that built up and was fundamental for survival, we developed our brains. When it was not able to store that much information either, communal memories were created, the medium of which was the alphabet and writing. At a later time, these were to comprise archives and libraries. And when these were not able to store so much information either, electronic information systems were created that were able to transmit huge amounts of information at a very high speed. It could be stated that man created the library in the image and likeness (Amat, 1990, p. 150) of his mind, up to such a point that he wanted to equip it with intelligence, which is the point we have reached now. The organisation, processing and retrieval of information tend to take on a structure and design according to the information-processing model of the human mind. And, last of all, we can see that creative thought at this point is the user making use of a library. In other words, just as having wisdom is remembering, having wisdom becomes searching. The user, able to make pertinent associations and searches, seeks to gain human wisdom through artificial wisdom.

Wisdom as the representation of knowledge

Finally, we can see that traditionally, linear thought was considered the only way of

reasoning, delimited first of all by the phonetic alphabet and second, by the very linear nature of writing. However, although our own thought structure has been adapted to the linear nature of writing and also that of the printing press, with today's electronic media this linear nature has been lost and approaches the discontinuity of reality. This discontinuity is made up of the new forms of artificial knowledge and artificial wisdom. Both terms, at present, with the mediation of the influence of the science world and English terminology already lack the adjective artificial and have come to be identified with natural or traditional wisdom and knowledge. In other words, we can see that the new way of processing electronic information and the science model of the English-speaking world have jointly determined that knowledge is productive information and wisdom is the representation thereof.

Wisdom as the ability to remember or represent, and knowledge as the ability to order or associate within a pre-existing framework, are going to be the conceptual basis for the new definitions of these terms, in such a way that, if this ability to remember and order human understanding is applied to information technologies, we will end up with productive forms of knowledge and wisdom.

Final comments on terminology

All in all, we can see that the changes in terminology that have taken place in library and information science are numerous and definitive. The current use of the word knowledge, which has totally taken root, and even the formerly named information society, is now referred to as the knowledge society. This new useful electronic knowledge is not qualified with the adjective artificial, and with the term wisdom, a similar process has taken place. These changes in terminology suffer from a great English-language influence, because they have been imported into our cultural surroundings and are causing the original definition of these terms to lose their true meaning.

All of this new terminology is leading to cultural and linguistic homogenisation, which is even more marked in the field of science. This is because the most economically underdeveloped countries are required to make academic consultations to centres and institutions which consequently become universal paradigms of knowledge (Amat, 1990, p. 26). Thus, there is an enormous influx of words from the English language to other languages and cultures.

We have a new concept of knowledge which has been derived from new information technologies and which has also been imported into our cultural environment. Therefore, it is of the utmost importance to discuss the theoretical, conceptual and social aspects of these new information technologies. The effects of computerising society, culture, information and knowledge must be subject to study. Aspects of access to cybernetic information cannot be ignored, because messages, telecommunications, information, knowledge and culture have been globalised. The national cultures formed over centuries and millennia are being replaced in terms of form and tradition by other cultural forms and values sent over new forms of communication media. Culture will no longer be collective memory or the expression of people's spirit, or a manifestation of social conscience. In conclusion, culture encompasses information, knowledge, exercising one's own values and habits and norms which identify a community, as expressed by González Manet (1999).

Thus, with the influence of new forms of electronic technology, information networks and enormous cultural and linguistic movement, not only has the concept of knowledge and wisdom changed, but also many other related concepts, which must also be subject to study and determination. As a result, the current new definitions of knowledge and wisdom, within the context of new documentary technologies, and with a very new form of writing, are not delimited only by their artificiality. They are also limited by their nature as a means of production. Information, knowledge and wisdom exist insofar as they are productive and useful. Today's globalisation is equivalent to certain market laws and a hegemonic power; ownership of the means of production generates power and capital (Baró Herrera, 1997). The world of information is not alien to this economic shift and is now contributing, as well as in other ways, with a terminology in accordance with these references in such a way that the adjective "artificial" has been slowly replaced by the

words "productive" and "useful". The mere terminological shift to our language and cultural environment of the terms information, knowledge and wisdom imposes a quite complex viewpoint of our intellectual tradition. The scientific context of library and information science must not just import terminology, but also gestate, found and conceptualise every form of scientific development with terminology that is more imbued with our own intellectual and cultural world. The pillars of the new society of knowledge are settling on the basis of productivity and utility, and this has turned knowledge into nothing more than productive information.

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