

Some scientific and philosophical principles of information science

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Nachr. f. Dokum. 36, 1985. Nr. 3, pp. 151-154

Summary

Reference is made to information science as a superior science comprising library science, archivology and documentation. The information is considered as an outcome of the three aforementioned fields. Certain philosophical and scientific principles, such as the Principle of Unification, the Magisterium of Hermes Trismegistus, the Worlds of Popper, Pensatics and Systems Theory, are considered with regard to their application to information science. The human being is regarded as the axis and centre of the universe and it is argued that by means of information science one can find wisdom, truth and happiness and achieve the progress of mankind (the human race). The end of mankind is predicted precisely when these aims have been achieved in absolute terms. The importance of information is discussed and a new epistemological theory is put forward based on the relaying of information. Within the evolution of any subject there comes a point when it is necessary to define certain principles upon which its scientific foundations are based, together with certain philosophical theories. Information science has perhaps reached that point.

Zusammenfassung

Einige wissenschaftliche und philosophische Prinzipien der Informationswissenschaft

Informationswissenschaft wird als übergeordnete Wissenschaft für Archivkunde, Bibliothekswissenschaft und Dokumentation verstanden. Information ist danach eine Folge aus den Aktivitäten in den o.g. Gebieten. Bestimmte philosophische und wissenschaftliche Prinzipien wie das Prinzip der Vereinigung, die Mystik des Hermes Trismegistus, die Welten Poppers, die sog. Pensatics und die Systemtheorie werden hinsichtlich ihrer Anwendung für die Informationswissenschaft betrachtet. Der Mensch wird als Achse und Zentrum des Universums bezeichnet, und es wird behauptet, daß der Mensch auch mittels der Informationswissenschaft Weisheit, Wahrheit, Wahrheit und Glück sowie den Fortschritt der Menschheit erreicht sind. Die Bedeutung der Information wird diskutiert und eine neue Erkenntnistheorie formuliert. Innerhalb der Evolution eines jeden Subjektes kommt man zu dem Punkt, wo es notwendig ist, bestimmte Prinzipien zu definieren, auf denen seine wissenschaftliche Fundierung beruht, zusammen mit bestimmten philosophischen Theorien. Informationswissenschaft hat vielleicht diesen Punkt erreicht.

Basic concepts

The concept of information science itself must be defined. With the evolution of this field, the time has come when it is now necessary to reflect upon its contents and upon the applications of the subjects composing it. From this reflection one can conclude the library science, archivology and documentation science (more commonly referred to as

documentation), are subject all within the same category and can have the same scientific and philosophical principles, as well as working techniques, applying to them. Perhaps the only difference between them is in the type of documents they deal with and in the form of the information they provide. They can therefore be included within a super concept, that of "information science" whose plurality should be forgotten.

Information can never be forgotten, partly because it is one of Man's inherent characteristics. Mankind cannot survive without information, which is either acquired consciously or subconsciously. It is also, in a specific sense, the ultimate objective of all studies, works and efforts of librarians, archivists and documentalists.

From our point of view, information, in spite of its importance, is an effect of documentation. Firstly, documents are prepared, the relevant data are obtained and are later divulged and provided to all who require them. In order for information to exist, the data, message or news have to be transmitted and perceived.

Information, on the other hand, cannot exist without documentation, while documentation can exist without information. This latter fact is sadly demonstrated by the little use made of certain documentation centres, libraries and archives.

It is obvious that, with the indiscriminate and large-scale preparation of documents, with the aim of preserving the massive cultural and scientific data produced by mankind, neither a super-utilisation nor economic returns can be expected. Such preparation is typical of general forecasting databases. The same should not occur in those institutions catering to a specific sector of the public. Actual experience, however, often demonstrates the contrary.

Another concept that should be mentioned is the connection or difference between the process defined by the binomial, documentation-information, on the one hand, and mass communication (mass media), on the other.

In both, the process begins with the real or abstract, fact or being, which converts either into data, when it is transformed into an idea, or event, when it is considered in terms of its space-time relation, and in news, when it has a historical background. Both data and news become a document and converge at this point, when they are sustained by a tangible support. They diverge, however, in their form of transference. Mass communication (mass information) requires communication in a closed process that ends when the news reaches the user, reader or individual.

In the documentation-information binomial, the data transmission provokes a new documentation and consequently a new information, and so on, in an irreversible and theoretically infinite process. By extrapolation, we can state that the process will end with the end of mankind.

In the beginning there was only a large quantity of potential documentation that mankind, throughout its evolution, has progressively transformed into information. This created a usable documentation that in turn brought about information, and so on. Documentation consequently decreases while information increases. At the end of the human world there will only exist information and no documentation. Who knows? But perhaps with the end of the world or, more precisely, the end of mankind, the state of information will be such that no new documentation can be created.

One should also take note of the opinion of several authors, *Coll-Vinent* among them, that information is produced by a progressive breakdown of matter into energy and subsequently into information. A specific time will be reached when only information remains.

According to systems theory, however, humanity (not man or the universe) as a whole is a closed system. There are not other mankind (at least as far as we know) with which to communicate. As a closed system, it produces information which it has to recycle and

assimilate in order to maintain an equilibrium. If the amount of information produced is in excess of the capacity for assimilation, the system would either have to change or die. This in fact the present-day state of humanity. It has to survive a transmutation and a transformation in order to assimilate and recycle the enormous quantity of information produced. On the other hand, it is obvious that the process has begun and that we are undergoing that transformation. Equally, there have been other periods in history when a large quantity of information has been produced and humanity has been capable of transmuting in order to maintain an equilibrium. Examples of such periods are: the transition from the Stone Age to the Bronze Age, the discovery of the printing press, etc.

Scientific-philosophical principles

Having spoken about mankind, let us turn to the role played by information science in the development and evolution of the human being. From the point of view of this paper, let us consider the human being as the axis and centre of the world surrounding us. The universe converges onto him and from emerges the noosphere. The human being is also the centre of the transition from the macrocosmos to the microcosmos.

The human being, which comprises body and spirit, is a thinking being, capable of transforming his external world into an internal one. Thus we can identify the world which surrounds him by his creations, either abstract or concrete, either philosophy or science.

Both real or abstract states or things of the exterior are consciously understood by man and he elaborates upon these and diffuses them. In other words, he carries out a documentary-informative process. Within his brain, the understanding phase is superseded by cognition, and knowledge is acquired. "Information sciences" are not knowledge in themselves, but they produce knowledge. Through knowledge one acquires wisdom and subsequently the concepts of truth and certainly. In order to acquire these concepts, documentation –are subsequently information- are fundamental. Both truth and certainly are however only relative, due to man's own limitations. The state of absolute truth is approached with each discovery and invention. It can perhaps be said, at this point, that the human being's mission in the universe will have ended when he discovers the absolute truth. Undoubtedly a very long time will have to elapse. We have spoken of the end of humanity as if echoing present-day tendencies referring to the proximity of this date. Several authors, though by different lines of reasoning, concur that mankind will last less than a hundred years. Just to give one example, we mention the engineer, *Aquilino Marcillo*, who by means of infodynamics has calculated that the end will be in 2017. We feel this is much too soon. The processes we have mentioned cannot possibly be concluded by such an early date.

Principles of unification

Man's two greatest illusions and self-imposed aims are the search for truth and the attainment of happiness. Having indicated that truth can be reached through information science, we shall now turn to the quest for happiness. Firstly, happiness is to be found within ourselves and it depends upon us to find it. It is neither given to us nor taken away from us.

In spite of this, philosophers throughout the ages have established guidelines for obtaining this priceless gift. Many share the opinion that happiness consists in reaching an equilibrium state by means of a perfect society. According to these theories, we can

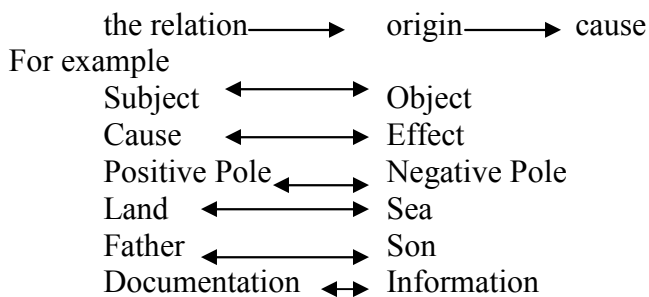
affirm that a perfect society can be achieved by a compensating quality and quantity of information, which would be brought about by an objective development of information science.

The following are a selection of theories proposed by different authors together with an analysis.

The first theory to be considered is that of the Korean, *Su Myung Moon*, in his Principles of Unification which embrace the principles of polarity (complementary relations), interaction (reciprocal and harmonic relations) and duality (relation of dependence).

By studying and applying these three principles to his own noosphere, man reaches a state of internal equilibrium and achieves a state of harmony which is reflected in the creation of an ideal society and, consequently, in the attainment of happiness. We have observed a certain parallelism between these three principles and information science.

The Principle of Polarity includes a complementary relation between beings of the universe. It always takes into account



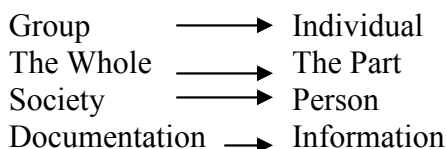
Each perfectly complements the other.

The Principle of Interaction implies a reciprocal and harmonious relation between beings. The one cannot exist without the other. For example:

Energy.....without.....Matter
 Action.....without.....Reaction
 Growth.....without.....Development
 Information....without.....Documentation

The two exist in a harmonious and reciprocal relationship.

The Principle of Duality involves a relation of dependence from greater to smaller. For example:



Information both depends on and originates in documentation, although at times it appears isolated through its individual nature. Once again it can be shown that information science can bring about happiness, this time through the Principles of Unification.

The magisterium of Hermes Trimegistus

When studying the different philosophical theories one comes across the hermetic writings of *Hermes Trimegistus* which for so long obscured the classical theories of the Greek and Latin philosophers. This has led us to the following curious conclusion.

According to Hermes Trimegistus, man relates with the world around him by means of Religion, Politics and Magic:

- through Religion he is related to the Supreme Being, the Creator;
- through Politics, the human being is related to his fellow men and here, one can also include the state, the family, the society, etc.;
- Magic relates man to his surroundings. Distinction should be made between Black (or evil) Magic and White (or good) Magic. Within this, one can include culture, technology, science,... and consequently information science.

Thus, we have shown, what surely no one would doubt, that “information sciences” are magical. How much magic is required at times to find certain data and documents!

The Worlds of Popper

Another philosopher, whose theories are of interest to this study, is *Karl R. Popper*. In a materialistic and positivistic approach, Popper speaks of the Universe and of the three Worlds in which man moves:

- World I comprises man's external surroundings and is already established, i.e. the firmament, the earth, etc.;
- World II is composed of man himself, of his character, his feelings, his evolution, his behaviour towards fellow men, etc.;
- World III is composite of the work carried out by man: his working, cultural and scientific activities, etc.

information science would consequently be included in the third World, as the result of a human activity-

A marked similarity is observed between the theories of Hermes Trimegistus and those of Karl R. Popper, in spite of the demystification of mankind, the loss of religious beliefs, the depreciation in eternal and transcendental values and the increasing importance of a human being after death as reflected in some sort of artefact. In our opinion Popper is influenced by the threat of automation and assumes that intellectual (or written) activity would immediately be taken over by computers or similar devices. If this were the case, we should lose all hope.

Pensatics

“Pensatics” is a present-day movement within the theory of organisation of knowledge that makes specific reference to the organisation of thought and is particularly relevant in the field of information science. Through Pensatics, people are taught to think, to reason and to become accustomed to forming their own critical judgement.

The Western civilisation has been accustomed to reasoning for several centuries and this capacity is, therefore probably transmitted genetically. Other civilisations, however, have been more isolated, maintaining their own customs and ways of life. Upon coming

into contact with other civilisation, there always exist the danger that they become so influenced that they lose their own idiosyncracies and their forms of cultural expression. For this reason, the theory of organisation of thought has evolved, which attempts, by means of a scientific, logical and coherent methodology, to teach people to think and hence to develop their intelligence.

Pensatics is carried out in three phases:

- reading exercise
- memory development
- practice in colloquy and debates

By substituting the unit of thought for the unit of information, it immediately becomes clear that information science serves as an excellent basis for Pensatics. It is not only because the three phases can be applied to the practice of information science, but also, in order to carry out these phases, one has to have suitable documentation and information, and a supply of books and documents for the organisation of thought.

In conclusion, it can be affirmed that information science contributes to the increase in intelligence and to the cultural evolution in all countries and all civilisations.

Informationism

Through this brief survey of certain theories that try to elucidate the basis and scientific principles of information science, we have shown how this science can serve as a fundamental support for the development of man and his search for truth and happiness. It is also shown in this paper how information science, in the result of man's intellectual activity, his thoughts and desires. Through information science, man's existence is perpetuated and his path through the immensity of the Universe is recorded. At least, we should like to feel that this is the case.

Information science also serves as a basis for other sciences. In the previous section, mention was made of the need for these sciences in order to put into practice the process followed in Pensatics. The same applies to the theories of the Worlds of Popper and any other type of study or research. Information science is a base for any type of human activity. Without these sciences, life on this planet would be impossible. We therefore permit ourselves to put forward the idea that modern epistemological theories are information based. It is the period of the "informationism".

This point leads us to carry out a material and moral evaluation of information. Both the factors of quantity and quality have to be considered, although the latter might rather have been left a side. Differences of opinion could arise regarding the quality factor. It is no easy factor to establish and it is difficult to adopt any criteria.

Information science therefore, is the basis for other sciences and, at same time, has an effect on them. *Desantes* mentions the terms "slave" and "cause or principle", which are highly suggestive. Both terms describe the quality of aristosciences which are, at the same time, sovereigns and subjects of other sciences.

Finally, it only remains for us to conclude this article by saying “nothing exist without information science and everything depends on it”.

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