

INFORMATION SCIENCE: INTERFACES AND LIMITS

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ABSTRACT

Information is an integral part of the world in which we live. To understand its characteristics will surely contribute to the future development of society. To study processes that involve information means to study social systems, human interactions, cognition, language, literature, art forms, technology and history. It means to study any representation of information, whether verbal, visual, printed or preserved in an electronic format and the interactions of human beings with these representations. This paper intends to reflect the development of Information Science from its origins and its interfaces with other sciences. It discusses, mainly, the relations of Information Science with technology and the role of technology in this trajectory of mutations. It calls the attention for the importance of this field, and the role of information professionals in the mediation of users in the information society, focusing, mainly, Brazilian reality.

INFORMATION SCIENCE: INTERFACES AND LIMITS

We have lived, in the past thirty years, through considerable advances in the processes of communicating information in all its forms. Historical and technological transformations reflect, in a specific way, in the field of informational activities. They express threats and questionings and the need to redesign characteristics in the areas of human knowledge and human activities.

We find ourselves, currently, in a world with more information and more conflicts. New tools expand our vision and horizons. At the same time that the world population increased, society became more complex and informational needs grew. As new means of transporting and storing information became available, more information was demanded, which necessitated, once again, new means of transporting and storing it. New technologies increase this effect in an exponential way.

These reflections intend to raise some questions about the development of Information Science since its origin, about its relationship with technology and about the role of technology in this trajectory of changes. In addition, we intend to call attention to the importance of Information Science, its relationship with other areas of knowledge and the role of the professionals in this area in the mediation and counseling of users in information society, particularly with respect to Brazilian reality.

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Information Science is a field that

“Has as its objective the study of the general properties of information (nature, genesis and effects), that is:

- the analysis of the processes of information construction, communication and use;
- the conception of products and systems that permit its construction, communication, storage and utilization.” [1]

This field took form in the early years of the twentieth century, with the development of Paul Otlet ideas at the end of the First World War. Its second and decisive impulse came at the beginning of the nineteen fifties, due to the need to optimize the processes of information collection, storage, retrieval and dissemination, arising from the need for systemizing and organizing knowledge, a consequence of the demands of the Second World

War. This field arose and developed from the search for answers to problems that were accentuated by this conflict. The cold war, the political bipolarization of this period and the space race contributed even more towards reinforcing the importance of efficient information storage and retrieval. In reality, the two world wars and the knowledge revolution that they brought, as well as a re-examination of the concept of nation and world that occurred at that moment, greatly contributed to the development of this science [2]

According to Saracevic (apud SILVA) [3] Information Science is:

- “interdisciplinary by nature;
 - inexorably linked to technologies, since it is dependent upon them;
 - an active participant in the development of the information society.
- In this sense, it has a human dimension that goes beyond its technological dimension.”

In its evolution, Information Science, in the last 50 years, has been characterized by the diversity of its approaches, seeking to define its essence through different studies and theories. In these studies, numerous concepts and definitions have been presented by different thinkers through the particular vision of each of them. Each researcher adopts a distinct way of observing, representing and explaining reality through his vision of the world. Some of these authors emphasize the communicational aspects of Information Science; others highlight its social function and still others point out its strong connection with technologies. These technologies have elevated the innovative tenor of the area and are in continuous change.

This close intimacy with technology, a factor of excellence in the development of Information Science, has been subverting, in recent years, fundamental concepts of the area, while, at the same time, amplifying the field with new research problems and new professional practices. Information Science, in this sense, maintains a balance, from the viewpoint of Saracevic, between two concepts – one technological and the other social.

Technologies are introducing questions about the future of this Science at the same time that this field of knowledge and social intervention is opening and becoming an area of work and reflection for professionals from other areas of knowledge. These advances are, in large part, a consequence of the intense use of digital technologies that join, in the same environment, stocks of information, records and information transfer. These technologies, which include the storing, retrieval and dissemination of data, images, texts, multimedia, videos, holograms and virtual reality are projects for providing information and technological capabilities to the population by means of digital networks, permitting an ever greater diversification of access and revolutionizing, in this way, the configurations of space and time and the concepts of representation and availability of information [4].

Information Science, at the same time, contributes to and is dependent upon technologies. In this sense, its evolution depends upon:

- this relationship with technology
- the definition of its relationship with other areas of knowledge.

Currently, this strong relationship of Information Science with technologies is demanding new openings in the area. In which directions is this Science going? Information Science, an interdisciplinary area, in our opinion, has to intensify its links with other knowledge areas.

As Foskett affirmed, [5] "a new discipline does not arise simply because old practitioners perform better in their jobs, but because, dynamically, new relationships emerge with other fields." Advances in any area of knowledge occur in the margins of each discipline. Therefore, the changes in the content and practices of Information Science have emerged in its margins, in the confluence with other sciences [6]. This dialogue, these intersections or intermediations with other areas are only possible through joint research. These researches are already occurring, since activities of organization, analysis and availability of information in electronic environments are, more and more, the work of interdisciplinary teams. However, in these partnerships, the role of the information scientist is, to our understanding, still timid.

In addition, the transformations that are occurring in a society that extends its networks to the four corners of the world by means of the activities of information storage and transmission brought changes in the relationship of the user with the information, with the mediators of information and with the activities of research [7]. The technologies that allow navigation in cyberspace have provided a greater autonomy to the user in his search for information. This autonomy has caused perplexity in professionals of the area who perceive that their role as mediator has diminished. From these changes of approach, the activity of information mediation can evolve to what Dosa, Farid & Vasarhelyi [8] call, very properly, user consultancy. Freire [9] also mentions the role of "facilitator" of knowledge communication. It seems to us that this is still a relatively unexplored area of Information Science in Brazil – the study of the change in the quality of the relationship with the user.

Currently, Information Science has strengthened its interdisciplinary relationships with areas such as Communication, Linguistics, Psychology and Information Technology. However, it is still necessary to develop models, redefine concepts and create new approaches, incorporating cultural, historical and social aspects, in the search for solutions to the problems caused by the transformation of the role of knowledge in today's society. Only then, will the area be fulfilling its mission.

Information Science, as Pinheiro [10] affirms, "born under the sign of war, seems to seek its reconciliation with the almost lost humanism, one of the sources of its birth." In this sense, its role in the mediation of information is fundamental.

Starting from the evolution of this role, we are currently living a new stage of development, where the information exchange by digital networks is permitting the emergence of a new paradigm: that of cooperative sharing of knowledge. The knowledge transmission to those who need it, is a social responsibility.

However, in what measure does Information Science participate in this exchange? In what measure do information scientists participate in this exchange? In which way does this cooperation become viable? Does this cooperation permit the transformation of the individual and society? If such action is possible, how does this transformation occur? How can a science, that deals with information use, can transform the individual and society? In other words, what is the role of Information Science in the transformation of society?

A field can be built only if the specifics of the processes that cross its path are understood. The information society manifests itself by means of contradictions and conflicts. The continuous and accelerating production of information and the accumulation of knowledge contribute to the strengthening of policies of concentration and exclusion. However, the information partnership also contributes to the appearance of intellectual technologies, transforming cognitive capabilities. The sharing of wisdom and knowledge is a reality of the informational society. In what way is Information Science using the technologies of information society to permit a greater social inclusion of citizens?

In a global society, information scientists must see, more than ever, their function as mediators, "advisors" or facilitators of communication. This faces us, once again, with the question of limits, the frontiers of Information Science and its role in society. One of the problems originating from this is the low visibility of this science, a consequence, of the lack of interdisciplinary research and dialogue with thinkers in areas of knowledge with common research themes.

It seems necessary to us that Information Science reflect upon the current transformations and the reality that such transformations provide. At the beginning of this new century, it is necessary to understand, more clearly, the significance of the terms information and knowledge and, as a consequence, the importance of information and knowledge sharing. However, this reflection will only be possible, in our opinion, through an interdisciplinary approach.

Knowledge was, at a determined moment in history, tightly restricted in areas or disciplines with well-defined limits. The complexity of today's world demands, for its comprehension, a return to a plural approach to knowledge through interdisciplinary studies. In this sense, understanding of the questioning and the changes in the information society will only be possible if information scientists join with researchers from other areas of knowledge.

The information stored in databases, libraries, museums and archives permits the production of new knowledge. However, this knowledge only become effective through an act of mediation mutually agreed upon between the sources and the receiver. Undeniably,

“this information, when adequately assimilated, produces knowledge, modifies the mental inventory of the individual and brings benefits for his development and for the development of the society in which he lives.” [11].

In a world of social, economic and political differences, the simple possibility of access to information does not imply its effective use in a way that can be transformed into knowledge. It is necessary that the individual that receives it be able to process it, elaborate it and transform it to his benefit and to the benefit of society. This is one of the fundamental roles of Information Science: to contribute to the information and knowledge sharing, towards the diminishing of digital exclusion.

As Paim [12] states,

“more than organize scientific knowledge (...) it will be important to provide its access to the public by means of the most diverse forms and the most diverse communication channels in such a way that this new force of social production can reach its potential users.”

In order to intervene in social life and encourage development at the same time, information must be accepted, assimilated and transformed. However, the reality in which we have to intervene is diversified, multifaceted and dynamic. In order that information transfer be carried out specifically and efficiently, it is necessary that this information be appropriate to the conditions and the reality of the receiver. Only if such conditions are fulfilled, will there be an information transfer.

“In our interactions with things, we develop competences. Through our relationship with signs and information, we acquire knowledge. In our relationship with others, through initiation and transmission, we make wisdom live. Competence, knowledge and wisdom (which can be related to the same objects) are three complementary forms of the cognitive transaction. [...] Each activity, each act of communication, each human relationship implies learning. In this way, we can, through abilities and knowledge, [...] nourish a circle of exchange and a sociability of knowledge.” [13].

In this sense, from the idea of effective socialization of knowledge proclaimed by Levy, it seems to us that the mission of Information Science is fulfilled. By active participation in an information society, as Saracevic reminds us, abilities are exchanged in a way that diminishes the information gap and contributes to a more fair world.

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