

Chapter 63

The Ellis Model of Information Seeking Behavior and the Peripheral Scientific Community

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ABSTRACT

This chapter explores the relationship between the Ellis Model of Information Seeking Behavior and the scientific community of Venezuela. The research employs a qualitative method to investigate the main information seeking activities of a scientific community in the periphery in the context of dependency theory. The following elements of the Ellis model are supported by the data gathered and analysis: starting, browsing, chaining, filtering, extracting, and information management.

INTRODUCTION

Access to scientific information is essential to the scientific endeavor, the process of creating scientific knowledge, and the scientific community. The primary channel for the communication of scientific information is the scholarly journal (McCain, 1989). Journals are composed of papers that are linked to each other by the use of citations, forming networks of knowledge (Price, 1965). There are other ways to communicate and disseminate scientific information, including personal communication, textbooks, conference attendance, conference proceedings, preprints, social media and digital content (Brown, 1999; Price, 1963; Tenopir, King, Edwards & Wu, 2009). However, accessing and examining current re-

search published in refereed journals is paramount to scientific research (Kirsop, Arunachalam, & Chan 2007).

The accessibility of sources of scientific information is determined and mediated by the availability of funds and by the existence of an infrastructure capable of supporting access to the information by the scientific community (Arunachalam, 2003). The rising price of scientific information is a concern in academic libraries around the world, because it is limiting the number of subscriptions that a library can afford to hold (Kirsop, Arunachalam, & Chan 2007; University of Illinois, 2009). Many academic libraries are canceling the subscriptions to individual journals and specialized databases and indexes. There has been a price increase in journals of 178.3%

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between 1990 and 2000. It is reported that a subscription to one scholarly journal may cost in an excess of US\$20,000 a year. Many academic libraries have seen their budgets decrease by at least 3% from the 1980s to the present (Scientific Journals International, 2008). The increasing cost of scientific information is affecting universities and research institutions all over the world. Only those institutions with enough funds are able to maintain their collections of print and electronic subscriptions, and thereby continue to provide to the scientific community the desired level of access to current and reliable sources.

This situation, which has become increasingly problematic in the U.S. and Europe, has become critical in the case of countries in the periphery. "Periphery" refers to regions with monopolized, underdeveloped or developing economies. "Core" refers to highly developed regions with diversified economies (Cardozo, 1972; Valenzuela & Valenzuela, 1978). For nations in the periphery, access to scientific information is even more limited by a lack of funds, inadequate infrastructure, and in some cases, language difficulties (Kirsop & Chan, 2005; Kirsop, Arunachalam, & Chan 2007; May, 2006).

There is an asymmetrical trade relationship between nations in the core and those in the periphery. The periphery exports raw natural materials and agricultural products, while the core specializes in the production of manufactured goods (Cardozo, 1972; Peet, 1999; Valenzuela & Valenzuela, 1978), which results in a cycle of continually increasing amounts of high tech products and informational services being offered to peripheral countries. Scientific information is a marketable good (Kingma, 2001) that is mainly produced and controlled in Europe and the U.S. For example, The *Journal Citation Report* (JCR) publishes usage and visibility indicators from 6,166 research and academic journals, and only 9.03% are published outside North America and Europe (Thomson, 2008a). This situation has placed peripheral countries at a disadvantage when they attempt to negotiate for

access to sources with the oligopoly conglomerate providers of scientific information. Oligopoly refers to a group of suppliers that exercise market control by setting prices and establishing output quotas of goods and services (Kingma, 2001). The access to information sources acquired by the periphery is in most cases very limited, which in turn affects the access of relevant material by the scientific community. Kirsop, Arunachalam, & Chan (2007, Technology transfer/Capacity building, para. 1) point out that "any limitation on the selection of material available and barriers to access lead to reduced scientific progress and continuing dependence."

Many countries outside of North America and Western Europe lack the necessary information and communication technology (ICT) infrastructure to be part of the global communication network, and have not been able to enter the global information society (May, 2006). A robust ICT infrastructure is necessary to access and interact with digital content, social media, and the international community. Many scientists in the periphery feel left out and excluded from scientific communication and dissemination processes because they lack the proper ICTs; they are "technological deprived" (Arunachalam, 2003, p. 136). By the same token, library collections and services offered to the scientific community are limited by insufficient funding and staff. In some cases, the library staff lacks sufficient training and do not offer enough services to the community (Majid, Anwar, & Eisenschitz, 2000).

Language also limits the access to scientific information. In selecting journals for indexing for databases and other informational goods, the scholarly publisher Thomson favors English language journals (Thomson, 2008b). Vickery (2000) points out that even though English is the mother tongue of only 8% of the world, up to 46% of all scholarly journals are published in English. The language barrier affects science because it limits knowledge transfer and dissemination. On the one hand, scientists with limited English proficiency

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