❚ Article ❚

A Look at Information Access through Physical, Intellectual, and Socio-cultural Lenses

Kim M. Thompson* & Waseem Afzal**

Abstract

Information access can be thought of as a continuum beginning with information acquisition and culminating at information use. Information access begins at a point where a user comes into contact with information. The nature of this contact is largely determined by three facets of information access, namely the physical, intellectual, and socio-cultural access to information (Burnett et al., 2008). Use of the acquired information is also affected by this tripartite model. A holistic study of information access must take these three facets into account when determining the likelihood with which information might be used by a user to satisfy her/his need.

Physical access to information is often addressed in digital divide studies, and intellectual information access tends to be a strong component of information literacy research. There are some studies (although limited in scope) exploring the socio-cultural aspect of access to information, but holistic discussion of information access that incorporates all three lenses in examination of access issues is largely absent from the information studies literature. This paper presents an overview of the complexities of this holistic model of information access, with an emphasis on understanding of the socio-cultural elements that support or prevent group access to needed information.

❚ **Key words** ː Information Access, Information Poverty, Theory in Research

 * Contact author, Charles Sturt University, Australia.

** Charles Sturt University, Australia.

Introduction

In the late 1970s, linguist Noam Chomsky noted that much of the research in his field was heavy on data collection and light on theoretical insight. He compared the observation-heavy research to butterfly collecting. "You can ⋯ collect butterflies," he said, "and make many observations. If you like butterflies, that's fine; but such work must not be confounded with research, which is concerned to discover explanatory principles of some depth and fails if it does not do so" (Chomsky, 1979, p. 57). Chomsky's comment allows that the taxonomic effort is useful as a starting point for research—the data of course must be collected—but data collection is shortsighted if not used to create advances in theory. Chomsky's quote appropriately describes research in fields other than linguistics as well. Examples of this in library and information science include research related to information access and information poverty.

Information access and information poverty have an intricate association-an association that has both conceptual and operational dimensions. From a conceptual standpoint, access precedes the condition of possession. Possession of information (to some extent) determines whether a group is information rich or poor; however, this possession is shaped by the ability of a group to access information. Similarly, from an operational standpoint, access influences possession; specifically, access is ensured through infrastructural measures in order to develop an information-rich group of individuals. It is this association that warrants an examination of information access while giving due consideration to the notion of information poverty. And it is this stance that is used by the authors to develop the conceptual foundations for this paper.

Information poverty has been discussed by journalists, government and non-governmental organizations, and academics from across the social science disciplines. The literature details demographics, cultural contexts of and the behaviors associated with information poverty, various literacies necessary for information access, and what constitutes an information-poor or information-rich infrastructure. Yet there is still much to be desired in understanding of information poverty as a whole among re-

searchers, information service practitioners, and policy makers.

Researching a phenomenon through different approaches can indeed shed light upon what is being examined. By studying information poverty, we are creating a richer understanding of information access and its characteristics and nuances. Still, there is no existing theory or model that takes the varied approaches used thus far into account. This article will suggest a model of information access that layers several approaches in order to encourage a holistic approach to the information access/information poverty issue. The authors will then discuss how this understanding of the effect of culture on this information access model can inform research, practice, and policy.

Information Poverty and Access

For nearly half a century it has been said that we inhabit a knowledge or information society. Today's information society is different from the industrial society of the early 1900s in that the global economy is now heavily affected by information whereas 100 years ago it was primarily influenced by production of goods. As information and information services have taken on an increasingly important role in this economy, in order for individuals and groups to fully participate we require access to the information that grants full enfranchisement and economic integration. This information access includes not only the ability to obtain information but also the ability to use the information obtained (Whiteley, 1994).

Looking at the above definition for information access, it can be argued that information access and information poverty have a close association; furthermore, lack of information access will greatly determine the extent to which a group can be considered information poor. Information poverty has also been defined as "a lack or scarcity of information about resources or opportunities available within and outside one's community" (McClure, 1974, p. 2), and information-poor as individuals who "perceive themselves to be devoid of any sources that might help them" (Chatman, 1996, p. 197). But what does information access entail?

Physical Information Access

In the 1980s, as personal computers grew in popularity, appearing in homes, offices, and schools, information poverty was discussed in terms of the information processing potential within the context of the information society, particularly in relation to the disadvantages individuals without ready access to computers might face (Buckley, 1987; Mason, 1986; Scherer, 1989). Also in the 1980s, researchers began exploring information poverty in terms of the global information society, comparing the advantages the information- and technology-rich United States and other developed countries had over less developed, technology-poor nations (Dubey, 1985; Gannett Center for Media Studies, 1987; Lang, 1988; Menou, 1983).

By 1991 the United States had enacted the *High Performance Computing and Communications Act,* which resulted in a focus on development of the national information infrastructure and the development of early Internet browser technologies. Then in 1995, shortly after the introduction of the Internet into popular culture, the United States National Telecommunications and Information Administration (NTIA) began a series of studies charting American Internet adoption and use. The NTIA studies identify the information poor as those who do not own computers or have in-home Internet access (1999, Executive Summary). This gap between these Internet haves and have nots was termed the "digital divide." The NTIA reports specifically focus on the concept of universal service, or ensuring that all citizens have not only equitable access to telephone services but also equitable online technology opportunities:

> *Individuals' economic and social well-being increasingly depends on their ability to access, accumulate, and assimilate information. While a standard telephone line can be an individual's pathway to the riches of the Information Age, a personal computer and modem are rapidly becoming the keys to the vault. The robust growth recently experienced in Internet usage illustrates this promise as new and individual subscribers gravitate to on-line services. This suggests a need to go beyond the traditional focus on telephone penetration as the barometer of this nation's progress toward universal service. (NTIA, 1995, Background)*

The report indicates that both telephony and Internet access appeared to be resistant to adoption in rural and central city areas of the nation, particularly among the economically poor who lived in those areas.

The reported purpose of the NTIA digital divide studies was to promote "public policies and private initiatives to expand affordable access to [information] resources ⋯ until every home [could] afford access" (NTIA, 1999, Executive Summary). In this statement it is clear that physical access to the technology and the infrastructure was considered to be equivalent to access to information itself. In other words, within this infrastructural paradigm, access to the information infrastructure and information and communication technologies (ICTs) is deemed to be sufficient to ensure information access.

Researchers from across the disciplines wrote about the digital divide and how the have nots would primarily consist of individuals with physical disabilities (Suppes, 1974), little access to modern ICTs (e.g., Fahey, 2001; Haywood, 1995; Parker, 1973/ 1974; President, 2005), and few infrastructure-related opportunities (e.g., Branscomb, 1979; Buckley, 1987; Buschman, 1998; McClure, 1974; Murdock & Golding, 1989; Parker & Dunn, 1972; Shimmon, 1995; United Nations International Telecommunication Union, 2002). This idea that provision of physical access to information via infrastructure and ICTs ensures information access influenced information policy in other nations as well, including Korea. In 1997, the Korean government enacted *Cyber Korea 21*, which stated a national vision of keeping pace with the knowledge economy by ensuring a strong information infrastructure and cooperation between all stakeholders (meaning government and business in particular). Today, Korea has the highest ICT Development Index rank in the world (United Nations International Telecommunication Union, 2011), meaning that Korea leads the way in ensuring physical access to digital information to its citizens.

Intellectual Information Access

Indeed, while physical access to books, journals, the Internet, and other information tools is clearly important for information engagement and the most widely studied approach to information

poverty, researchers have also noted that physical access to information is not always enough to ensure an informed populace. Education and information studies researchers in particular have focused on education (e.g., Kenway, 1996; Martin, 1973, 1974; Mason, 1986), information literacy (e.g., Eisenberg & Berkowitz, 1990; Kuhlthau, 1989, 1995; Stripling & Pitts, 1988), "technical competence" (Mossberger et al., 2003, p. 40), language skills (e.g., Metoyer-Duran, 1991, 1993), and other abilities and skills users need to acquire and process information. This focus on the skills and abilities needed for full information access has been termed intellectual access to information (Burnett et al., 2008).

New ICTs change both the distribution and communication of information and thus affect information access. Changes in the infrastructure require new technologies, which in turn require that users have updated training and educational opportunities. Radio and television required no special skills for use except perhaps some amount of understanding of the language in which a program is broadcast, but modern ICTs and the software, databases, and interfaces they access typically require some amount of training for optimal information retrieval. Librarians, teachers, and other information professionals tend to provide the ICT training users need to navigate new technologies and platforms. Usability analyses and user studies examine human-computer interactions and focus on understanding how users think and act when faced with new systems in order to improve interface design and usability. Online translating systems provide instant language translation of interfaces, so that a user who does not read Spanish, for example, can still download and read the Honduran website http://www.digepi.gob.hn/derechos_de_autor.htm using Google translate (http://translate.google.com/) and get the gist of the information presented there.

Training, usability analysis, and language translation all facilitate intellectual access to information and information systems, thus ensuring information access to the public. Understanding intellectual information access helps us see that even when every child has a laptop or the library is filled with books and open 24 hours a day, intellectual access barriers can keep users from obtaining or using needed information. But we need to be careful as we focus on physical and intellectual access to information, as information poverty literature too often blurs with economic pov-

erty literature. Education and training in information skills and literacies are usually tied to formal educational practices that are typically better funded in private or higher income areas and schools than in government subsidized programs. Wealthier schools also tend to have more physical access to ICTs and the information infrastructure. Looking solely at physical and intellectual access to information, one might wonder if information poverty is simply another economic disadvantage. Since the 1970s, however, studies have shown that social behavior and cultural influences can also have great affect on information access (e.g., Childers & Post, 1975).

Socio-cultural Information Access

Understanding socio-cultural access to information includes understanding how interpersonal networks and relationships affect information and communication flows. Socio-cultural information access issues can also be connected with economic poverty, but does information poverty necessarily stem from economic poverty or a poverty culture? Library and information science researcher Elfreda A. Chatman explored a similar question as she engaged in ethnographic studies of the "impoverished information world" (Chatman, 1992, p. 137) of both poor (e.g., Chatman, 1983, 1985a, 1985b) and non-poor or middle class (Chatman, 1991b, 1992, 1996) demographic groups. Rather than focus on computer ownership she proposed instead that it is "our membership within a particular social group [that] contributes to information poverty" (Chatman, 1996, p. 197). She searched for established sociological theories that might explain why individuals who had ample physical access to information and sufficient intellectual access might still be information poor.

She found that extant social theories clarified some but not all of the information problems she observed. In 1996 she published a theory of information poverty, one with a heavy cultural/behavioral focus. Chatman's research suggested that social alienation and isolation were more endemic to information poverty than economic status or physical distance from technology. She described this theory as "middle range," as it was based on a limited amount of ethnographic observation among a limited number of American subcultures. Chatman's theory has been a launching point for a

new wave of cultural information poverty research (e.g., Burnett et al., 2008; Fisher, Marcoux et al., 2004; Hersberger, 2002; Jaeger & Thompson, 2004; James, 2000; Pollock, 2002; Sligo & Williams, 2001), but there are still unanswered questions.

Drawing upon the above literature, rather than focus solely on physical access to ICTs, intellectual access, or socio-cultural contexts that affect information access, the authors propose a richer model of information access that incorporates all three of these approaches and provides a more complete understanding of both information access and information poverty. Burnett et al. (2008) have suggested a three-pronged approach to information access, focusing on physical, intellectual, and social access issues, but no model has been created as of yet. This work will attempt to present such a model, but first it is important to establish the need for such a model through an overview of the questions left unanswered with the single- or even double-pronged approaches taken in the study of information access to date.

Developing a Theory of Information Access

The three approaches to information access discussed above have contributed greatly to forming a body of literature that indicates that information access is an issue that is worth further study. The purpose of this section is to illustrate that these three lenses are most useful when viewed as three parts of a single theoretical model or paradigm. The current work, while it does not develop a new theory fully, attempts to provide a starting point for establishing such definitions and delimitations. A combined approach to information access has the advantage of using all three lenses to view information access holistically.

Rather than thinking in terms of which approach is more important to address before the others, the authors recommend that all three should be considered simultaneously. For example, a side-by-side analysis of national/community information infrastructures, information literacy, and the social information environment could be useful for teasing out the role of each of these contributors to information access. Meshing the three approaches may also help us understand how information exists within a given context and perhaps help us begin to develop useful ways of addressing information access barriers.
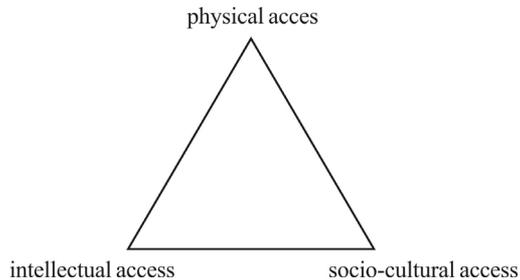
Figure 1. Information Access Model.

Figure 1 illustrates a tripartite approach to information access. The diagram shows the equilateral relationship between the three different aspects of information access—the physical, the intellectual, and the socio-cultural. According to this model, none of the three types of access is sufficient in and of itself. All three must be present in order for full information access. Any sort of breakdown in access at any level (physical, intellectual, or socio-cultural) results in what has been referred to as information poverty or lack of full information access. One example of information poverty, for example, would be a lack of democratic information access because of lack of access to appropriate information technologies or overall information infrastructure, or a basic lack of information skills or training. Another type of information poverty would stem from identifying with a social group that is surrounded by a plentiful information infrastructure but does not physically access information because of lack of trust in the technologies needed to retrieve said information.

Another important point to infer from the above model is a continuous interaction among the three constructs. Specifically, that physical, intellectual, and socio-cultural access complement and support each other and this interaction shapes the nature of information access at the individual and group level. For instance, different institutions within a society (particularly economic and political institutions) influence the policy initiatives that ensure public information availability to the public. Economic affluence along with other contributing factors such as the information technology revolution and changing nature of global competition have played a significant role in developing

policies promoting spending on better information infrastructures, investing in hi-tech organizations, and using information and communication technologies.

For example, the aforementioned United States *High Performance Computing and Communications Act of 1991* and *Cyber Korea 21* resulted in a focus on development of national information infrastructures and are examples of policy initiatives that required substantial economic commitment on the part of government. These policy initiatives helped to develop new norms within a society-norms associated with the use of artifacts in everyday life to accomplish different objectives. Policy initiatives emerging from economic performance modify the culture of a society and the interactions among people. Successful implementation of information infrastructure policy and public adoption of ICTs influence the expectations of people associated with various everyday life activities and this, in turn, shapes the interactions of people with each other.

A person who has been using computers and the Internet in his/her workplace to perform work tasks, communicate with peers, find information, and perform various other tasks develops a personal norm regarding accessing ICT, accessing information through that ICT, communicating with peers while sitting at his/her desk, etc. This person then accesses, makes sense of, and transfers information in a certain way: all of which is shaped through an interaction among social (economic affluence in a certain society, changing cultural norms regarding everyday life activities), physical (information infrastructure developing as a result of policy initiatives), and intellectual (an individual's understanding of his/her changing environment and associated expectations) factors.

Some examples from different societies will help to clarify as well as substantiate the abovementioned argument. One of the authors was the director of an academic library in the Republic of Panama in the early 2000s. Upon starting her directorship, the university president informed her that no books were to be deselected from the collection because the university held the largest English language book collection in Panama. While the books were largely donations that did not meet the needs of the students studying in the courses the university offered, the library collection was maintained simply for boasting rights of the print-

ed stock of books in English. It was so because acquisition of books was limited due to constrained resources (physical factor), but although books could perhaps have been sold to provide funds for new, needed books, the cultural value placed on having a large collection in English (socio-cultural factor) and because the university president considered the collection to be for the prestige of the university rather than strictly for the needs of the students' (socio-cultural factor), the information resource (library) had limited ability to fulfill the end user's (student and faculty's) information needs (intellectual access).

Another example from the experience of the other author results from a recent visit to a public library in Melbourne, Australia. This public library serves a multicultural population. In order to cater to the needs of this community, the library has a sizeable multilingual collection. So the nature of the community (socio-cultural aspect) shapes the collection (physical aspect) of this library and then the ability (intellectual aspect) of the target users to access information. It can therefore be suggested that physical, intellectual, and socio-cultural aspects of access interact with each other to shape the overarching access phenomenon as proposed in the above model.

An example of our everyday interaction with information can also demonstrate the interaction among the three factors. Present day smart phones are equipped with technologies enabling users to access Internet, listen to music, and do various other activities. The performance of these activities was once possible only through the use of multiple artifacts (e.g., telephone to talk, computer to e-mail, CD player to listen to music). Smart phones allow the user to engage in all of these tasks using a single technology that fits in one's pocket, thus affording immediate and portable access to the information infrastructure (physical aspect). Widespread adoption (social aspect) and practiced use of these artifacts (intellectual aspect) allow users to engage with the information infrastructure to perform everyday life tasks.

Personal disability or lack of specific abilities (intellectual or physical) can result in lack of information access. Low literacy and lack of language skill can lead to situations in which information cannot be accessed regardless of the presence of an abundance of valuable information. Information may be rejected based on lack of trust of outside information or outsiders in gen-

eral, lack of feelings of belonging, or lack of belief that information is actually useful to meet personal information needs. These and other examples simply illustrate the need to take the holistic tripartite approach to information access described above as we try to understand how individuals with physical and even intellectual access to ICTs may still not have access to the information that is intended for them.

Application

Usefulness of the above model can be examined by focusing on some examples of how the tripartite model of information access can affect research, practice, and policy.

Research

If information access studies are to continue identifying populations as information-poor, certainly more needs to be done to create measurable criteria for determining that groups are actually information-poor before said groups are labeled as such. Otherwise, we risk identifying and categorizing individuals and groups as unequal without grounds for doing so, thereby intensifying whatever inequities there might be. The digital divide bifurcation of ICT haves and have nots seems to be the only measurement we currently have for determining information access or poverty. Studies of migrant workers and homeless individuals, for example, ask questions such as why someone would be living on the street if s/he had information about shelters, public aid, etc. However, research thus far indicates that information access is not necessarily the most pressing issue these marginalized populations face (e.g., Hersberger, 2002/2003; James, 2000). Examination of physical, intellectual, and socio-cultural elements of information access should be done before a population is labeled information poor.

A more complete understanding of access to information in nations where information is primarily delivered orally, through non-electronic means, filtered through government agencies, and so forth may be achievable by using the tripartite model of information access. For example, in the late 1990s, researchers Virginia Dike and Nancy O. Amucheazi (1997) asked whether "a

developing country like Nigeria [could be] information rich" (p. 245). According to Dike and Amucheazi, Nigeria is a nation where indigenous knowledge is primarily delivered orally, but with some print information published as well- usually in less formal print mediums such as pamphlets and flyers. Nevertheless, Dike and Amucheazi note that "information from outside," or from other nations and communities, is often more highly valued than information "from inside," or within the community, regardless of the actual practical usefulness of the information acquired, creating a situation in which indigenous information is ignored, even when it is easier to access, more applicable, and of higher quality (p. 245).

In this case, researchers must examine socio-cultural access to information in conjunction with physical access. While Nigeria might lack an infrastructure as sophisticated as that of more developed nations, the transmission of the information often relies quite heavily on social interaction (e.g., oral information transmission). Research related to information access, therefore, requires a multidimensional view such as the one modeled here.

Another example might be the case of multilingual societies, where individuals are expected to operate in different languages within different domains (i.e., different languages or dialects are used at home, at school, in business communication, for government information dissemination, etc.). This multilingualism has an effect on how individuals react to or use information delivered, as language (a component of intellectual access) can have serious social implications. For example, research indicates that in multilingual societies dramatic or comedic characters in television programs or movies often switch between dialects or languages for dramatic effect. Characters using a local dialect or accent might be portrayed as foolish or clever, depending on the esteem the society places on the dominant or local languages (Thompson, 2003). Thus the language in which information is presented has an effect on the social value the information is granted. Even in a nation where language ability in relation to information access primarily centers on one unofficial language, such as Spanish, language ability is still an issue among immigrants and minority populations. In nations where several languages are standard, the language issue would most likely need much more attention than it has received to date in information

access research.

Finally, the body of information poverty research provides a large amount of data supporting the notion that lack of physical access to ICTs and/or the information infrastructure can lead to economic and/or social disadvantage. However, since this physical access approach has not been theory driven, research and policy in this area quickly drifts towards too heavy a focus on the latest delivery instruments, making it easy to dismiss information poverty as nothing more than a ploy to market ICTs. When we use the digital divide to measure information access we overlook very fundamental questions such as: What are the desired outcomes tied to overcoming the digital divide (i.e., democratic participation? economic stability or prosperity? social inclusion?)? How is the current information infrastructure helping or hindering individuals from achieving these outcomes? What types of information are necessary to achieve the desired outcomes? What keeps people who have physical information access from becoming more informed? These and other questions can be better examined using the suggested model above.

Practice

Information service providers can benefit greatly when using the tripartite model while designing information spaces, services, programs, and products. Taking all three approaches into account will lead to information agencies with fewer information barriers. With socio-cultural access in mind, allowing users to use social networking websites and check email will be seen not as a waste of resources, but rather as yet another information service the organization provides. Acquiring multilingual materials may become a higher priority and be provided for users of all ages as a means to further intellectual access. Along those same lines, user workshops might be designed that teach users about information evaluation and authority. For libraries, bookmobiles, Internet kiosks, and other outreach efforts might be created to provide physical access to the user outside the boundaries of the brick and mortar library itself.

Thinking beyond libraries, one can imagine application in other information venues. For example, television and radio and even the Internet are often assumed to be lower quality in-

formation resources than print resources. However, educational and news broadcast television and radio channels can be used to provide up-to-date and pertinent information twenty four hours a day seven days a week. Perhaps it is time for a new analysis of the value of mass media as informer? Even telenovelas, movies, and other entertainment media often include popular and/or everyday use information regarding politics and social, economic, or health issues. If mass media can be used to provide needed information, infrastructural universalism could actually be a large contributor to physical information access, while viewing choices would most likely be influenced by social factors. Social access research could help determine what it is about specific mass media offerings that are so appealing to different social groups, which in turn could be used by information professionals as they decide how information media can be restructured in a way that is more appealing to underserved groups and individuals. Understanding how physical, intellectual, and social contexts influence information acceptance would certainly be of use when using mass media to pass important information to the general population.

One might say the ideal information world is a place with "the right information at the right time, in the right place, in the right form, and of sufficient completeness and quality to perform the current activity" (Jones, 2004, p. 2). However, the right information is not always available at the right time, in the right form, or even completely available. Deciding when to store or delete information, deciding how to organize and file non-immediate information in order to be able to access it quickly should the need arise, knowing how to glean the most important parts of incoming information so as not to feel overwhelmed or overloaded with information, for examples, can be a quandary. Because of this complexity of information behavior, some information can be left untouched, even when the information is clearly needed. These suggestions are only the tip of the iceberg of what might be done to expand service as one explores tripartite information access in information agencies.

Policy

Current barriers to information access, even at the infra-

structural level, need not be permanent. Leapfrogging technology advances, trainings, adaptive technologies, social inclusion, and other focused changes can enhance information access and reduce breakdowns in the communication of information, if not resolve them completely. The above model might be used when answering such questions as: What criteria might be used to be sure that information is in fact the right information to meet an individual or group's information needs? Are there specific information literacy proficiencies that might help researchers suggest policy and develop education curricula that would provide appropriate training for all individuals within a given culture or society? How much or what kinds of information does an individual need to process in order to be considered to have full access?

Awareness of information access problems is the first step towards resolving them. Telecommunications policy can be drafted to strengthen the physical information infrastructure and create universal access opportunities. Educational policy can help support programs that increase user literacy and ICT training. In addition, strong infrastructures and educational systems can facilitate interaction between social groups and cultures, wielding an influence on valued skills, behaviors, and attitudes.

Conclusion

This work is an attempt to look for answers to information access questions. A multi-dimensional understanding of information access might be useful for policy or other measures aimed at improving information access. As noted in the Chomsky quote, the aim of theoretical research is to describe, explore, and explain rather than simply collect data and then piece together solutions to observed problems without greater understanding of the phenomena as a whole. Hopefully this review of the information poverty research and suggestion of a model that takes the three approaches to information access into account will help scholars understand their role is not simply collecting butterflies, but rather it is developing a paradigm to guide information research, practice, and policy.

References

Branscomb, L. (1979). Information: The Ultimate Frontier. *Science,* 203(4376), 143‒147.

Buckley, F. (1987). Knowledge-Access Issues. *The Information Society,* 5(1), 45‒50.

Burnett, G., Jaeger, P., & Thompson, K. (2008). Normative Behavior and Information: The Social Aspects of Information Access. *Library & Information Science Research,* 30(1), 56‒66.

Buschman, J. (1998). History and Theory of Information Poverty. In K. M. Venturella (Ed.), *Poor People and Library Services* (pp. 16‒28). Jefferson, NC: McFarland & Company.

Chatman, E. (1983). The Diffusion of Information among the Working Poor. Unpublished dissertation, University of California, Berkeley.

Chatman, E. (1985a). Low Income and Leisure: Implications for Public Library Use. *Public Libraries,* 24, 34‒36.

Chatman, E. (1985b). Information, Mass Media Use and the Working Poor. *Library & Information Science Research,* 7, 97‒113.

Chatman, E. (1991a). Life in a Small World: Applicability of Gratification Theory to Information-Seeking Behavior. *Journal of the American Society for Information Science,* 42, 438‒449.

Chatman, E. (1991b). Channels to a Larger World: Older Women Staying in Contact with the Great Society. *Library & Information Science Research,* 13, 281‒300.

Chatman, E. (1992). *The Information World of Retired Women.* Westport, CT: Greenwood Press.

Chatman, E. (1996). The Impoverished World of Outsiders. *Journal of the American Society for Information Science,* 47, 193‒206.

Childers, T., & Post, J. (1975). *The Information-Poor in America.* Metuchen, NJ: Scarecrow Press.

Chomsky, N. (1979). *Language and Responsibility.* Sussex: Harvester Press.

Cisler, S. (2000). Subtract the "Digital Divide." *San Jose Mercury News,* (January 16, 2000). Retrieved from http://www.athenaalliance.org/rpapers/cisler.html.

Cyber Korea 21. (1999). Retrieved from http://www.ipc.go.kr/ipck-

or/etc/cyberkorea21.html.

Dike, V. & Amucheazi, N. (1997). Information for All: Resource Generation and Information Repackaging in Nigerian Schools. ED 412 963, US Department of Education.

Dubey, Y. (1985). Information Poverty: A Third-World Perspective. ERIC document ED 314051.

Eisenberg, M. B. & Berkowitz, R. E. (1990). *Information Problem-Solving: The Big Six Skills Approach to Library and Information Skills Instruction.* Norwood, NJ: Ablex.

Fahey, N. (2001). Training to Overcome Electronic-Information Poverty: An Australian Experience. *Informing Science* (Conference Proceedings). Retrieved from http://proceedin gs.informingscience.org/IS2001Proceedings/abstracts /FaheySUMTrain.htm

Fisher, K., Marcoux, E., Miller, L., Sánchez, A., & Cunningham, E. (2004). Information Behaviour of Migrant Hispanic Farm Workers and their Families in the Pacific Northwest. *Information Research,* 10(1). Retrieved from http://informatio nr.net/ir/10-1/paper199.html

Gannett Center for Media Studies. (1987). *The Cost of Technology: Information Prosperity and Information Poverty.* New York: Columbia University.

Haywood, T. (1995). *Info-Rich-Info-Poor: Access and Exchange in the Global Information Society.* London: Bowker-Saur.

Hersberger, J. (2002/2003). Are the Economically Poor Information poor? Does the Digital Divide Affect the Homeless and Access to Information? *The Canadian Journal of Information and Library Science,* 27(3), 45–63.

High Performance Computing and Communications Act of 1991, P. L. 102–194 (1991).

Jaeger, P. & Thompson, K. (2004). Social Information Behavior and the Democratic Process: Information Poverty, Normative Behavior, and Electronic Government in the United States. *Library & Information Science Research,* 26(1), 92–107.

James, L. (2000). Living with Information Poverty: A Study of the Information Behavior of Homeless Parents. Unpublished dissertation, University of Washington.

Jones, W. (2004). Finders Keepers? The Present and Future Perfect

in Support of Personal Information Management. *First Monday,* 9(3). Retrieved from http://www.firstmonday.org/issues/issue9_3/jones/index.html

Kenway, J. (1996). The Information Superhighway and Post-Modernity: The Social Promise and the Social Price. *Comparative Education,* 32(2), 217–231.

Kuhlthau, C. (1989). Information Search Process: A Summary of Research and Implications for School Library Media Programs. *School Library Media Quarterly,* 22(1), 19–25.

Kuhlthau, C. (1995). The Process of Learning from Information. *School Libraries Worldwide,* 1(1), 1–12.

Lang, J. (Ed.). (1988). *Unequal Access to Information Resources: Problems and Needs of the World's Information Poor.* Ann Arbor, MI: Pierian Press.

Martin, C. (1973). "There's More than One Way to Skin a Cat" (The Issue of Heredity and Anti-Egalitarian Research). *The Journal of Negro Education,* 42(4), 559–569.

Martin, C. (1974). Editorial comment: Black English and Black history-Continuing Themes. *The Journal of Negro Education,* 43(3), 263–264.

Mason. R. (1986). Four Ethical Issues of the Information Age. *MIS Quarterly,* 10(1), 5–12.

McClure, D. (1974). *The Cost of Poverty: Information for Action.* Frankfort, KY: Legislative Research Commission.

Menou, M. (1983). Mini- and Micro-Computers and the Eradication of Information Poverty in the Less Developed Countries. In C. Keren & L. Perlmutter (Eds.), *The Application of Mini- and Micro-Computers in Information, Documentation and Libraries* (pp. 359–366). North Holland: Elsevier Science Publishers B. V.

Metoyer-Duran, C. (1991). Information-Seeking Behavior of Gatekeepers in Ethnolinguistic Communities: Overview of a Taxonomy. *Library and Information Science Research,* 13, 319–346.

Metoyer-Duran, C. (1993). The Information and Referral Process in Culturally Diverse Communities. *Research Quarterly,* 32, 359–371.

Mossberger, K., Tolbert, C., & Stansbury, M. (2003). *Virtual Inequality: Beyond the Digital Divide.* Washington, D.C.: Georgetown

University Press.

Murdock, G. & Golding, P. (1989). Information Poverty and Political Inequality: Citizenship in the Age of Privatized Communications. *Journal of Communication,* 39(3), 180–195.

NTIA. (1995). *Falling through the Net: A Survey of the 'Have-Nots' in Rural and Urban America.* US Department of Commerce: National Telecommunications and Information Administration. Retrieved from http://www.ntia.doc.gov/ntiahome/digital-divide/index.html

NTIA. (1999). *Falling through the Net: Defining the digital divide.* US Department of Commerce: National Telecommunications and Information Administration. Retrieved from http://www.ntia.doc.gov/ntiahome/digitaldivide/index.html

Parker, E. B. (1973/1974). Implications of the New Information Technology. *The Public Opinion Quarterly,* 37(4), 590–600.

Parker, E. & Dunn, D. (1972). Information Technology: Its Social Potential. *Science,* 176(4042), 1392–1399.

Pollock, N. (2002). Conceptualising the Information Poor: An Assessment of the Contribution of Elfreda Chatman towards an Understanding of Behaviour within the Context of Information Poverty. *Information Science.* Retrieved from http://users.bigpond.net.au/neilpollock/info_science/chatman.html

President, T. (2005). A Study of a Community Technology Center in Brooklyn: An Exploration of the Contemporary Digital Divide. Unpublished dissertation, Columbia University Teachers College.

Scherer, C. (1989). The Videocassette Recorder and Information Inequity. *The Journal of Communication,* 39(3), 94–103.

Shimmon, R. (1995). The Librarian at the End of the Galaxy. *New Library World, 96*(3), 43–48.

Sligo, F. & Williams, J. (2001). Investigating Information Poverty and Its Implications for Community Development. National Social Policy Conference, University of NSW. Retrieved from http://www.sprc1.sprc.unsw.edu.au/nspc2001/abstract.asp?PaperID=196

Stripling, B. & Pitts, J. (1988). *Brainstorms and Blueprints.* Englewood, CO: Libraries Unlimited.

Suppes, P. (1974). A Survey of Cognition in Handicapped Children. *Review of Educational Research,* 44(2), 145–176.

Thompson, R. (2003). *Filipino English and Taglish: Language Switching from Multiple Perspectives.* Philadelphia, PA: John Benjamins Publishing Company.

United Nations International Telecommunications Union. (2002). The United Nations General Assembly Resolution on the World Summit on the Information Society. Retrieved from http://www.itu.int/newsarchive/press_releases/2002/UNGA_res_56_183.html

United Nations International Telecommunications Union. (2011). Measuring the Information Society. Retrieved from http://www.itu.int/ITU-D/ict/publications/idi/2011/Material/MIS2011-ExceSum-E.pdf

Whiteley, S. (Ed.). (1994). *American Library Association Guide to Information Access.* New York: Random House.

Biographical Note

Kim M. Thompson is a Lecturer in the Charles Sturt University School of Information Studies, Australia. She received her M.S. and Ph.D. degrees in Library and Information Studies from Florida State University, U.S.A. Thompson's research focuses on subjects related to information poverty and information access. In 2010 Thompson was in Honduras as a Fulbright Scholar to consult on the creation of a Master's curriculum for Library and Information Science at the *Universidad Pedagógica Nacional Francisco Morazán* as a means to strengthen the information infrastructure of Honduras and provide improved information access through better information services in school, public, academic, and special libraries.
E-mail: kithompson@csu.edu.au

Waseem Afzal holds a Lecturer appointment at the Charles Sturt University School of Information Studies, Australia. His formal education took place at the Emporia State University, U.S.A. where he earned his M.B.A. in Business Administration and Ph.D. in Library and Information Management; and the University of Punjab, Pakistan. He researches in the areas of human information behavior, economics of information, social informatics, and Library and Information Science education.

E-maill: wafzal@csu.edu.au