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A Generation of Information Anxiety: Refinements and Recommendations



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ABSTRACT

Richard Saul Wurman's groundbreaking *Information Anxiety* (1989) was published exactly one generation ago. The passage of time has allowed information specialists to reflect further upon the notion of information anxiety and such related concepts as "info-glut," "techno-stress," and "info-addiction." The interval has also allowed librarians to develop best practices to inoculate against information anxiety and to alleviate the symptoms of information overload. This essay will address definitional concerns regarding information anxiety and related phenomena; investigate the causes and effects of information anxiety; discuss specific difficulties in relationship to the reception, processing, and application of information; and consider the role of librarians in reducing information anxiety.

Introduction

Two scientific studies, one using data from Quebec and the other using data from Iceland, have determined that the average length of a generation is 28.7 years in the female-line intervals (Devine, 2005). This tidbit of information would lead one to conclude that the autumn of 2017 marks the one-generation milestone of Richard Saul Wurman's pioneering work entitled *Information Anxiety*, originally published in January of 1989. The publication of this book came a year before Wurman commenced the annual TED (Technology, Entertainment, and Design) conference series in 1990.¹ These TED Talks are now globally famous media events ("History of TED," 2016).

Wurman's *Information Anxiety* was a seminal work that has been credited with bringing the phrase "information anxiety" into popular discourse (Girard & Allison, 2008, p. 111). The book was generally praised, although not universally. Robert Campbell accused the book of having an "annoying" premise (Campbell, 1989, p. 810). Campbell argued that the book looked at the coming information age and expected "not hope, or euphoria, or even skepticism, but the jitters!" (p. 810). Instead of information anxiety, Campbell recommended an "information ecstasy" that anticipated the "joys of discovery" (p. 810). Notwithstanding, most readers

¹ Wurman had already organized a "one-off" TED event in 1984 (see *History of TED*, 2016).

appreciated Wurman's creative and refreshing insights, praising him for his "dry wit, lucid thinking, and ability to break intangible topics into bite-sized pieces" ("Architecture," 1990, p. 64).

Through his writings and his organization of the TED "techno-entertainment" events, Wurman became famous as an insightful and forward-looking public intellectual ("Technology," 1997). Having been formally educated as an architect and graphic designer, he was credited with the founding of "information architecture," and he secured the title of "America's premier architect of information" (Wurman, 1989a, p. 27; cf. Wurman & Bradford, 1997; Conhaim, 2001, p. 11).

Definitional Concerns

While information anxiety is related to "technological anxiety" (or "computer anxiety") and "library anxiety," it distinctly concerns the knowledge content (information) rather than the means of delivery (computers or technology) or conventional location (the library). Technology anxiety or "techno-stress" (including computer anxiety) relates to the hesitancy, fear, or unwillingness to use forms of developing technology (Wheless, Eddleman-Spears, Magness, & Preiss, 2005, pp. 144, 146; Bawden & Robinson, 2009, p. 183). Library anxiety can include an uneasiness with finding materials in the library or of approaching the reference desk (Katopol, 2005, pp. 235-238; Eklof, 2013, pp. 249-251; Katopol, 2014, pp. 1-4). Patrons with library anxiety may feel afraid to ask questions for fear of being stereotyped or judged as "stupid," or they may carry the baggage of past unpleasant experiences (Katopol, 2012, pp. 10-11). Information anxiety, on the other hand, relates to apprehension about finding, selecting, processing, interpreting, managing, and applying information. It is caused by "the ever-widening gap between what we understand and what we think we should understand" (Conhaim, 2001, p. 11).

While emotional-psychological information problems can be related to an "information poverty" or to an "information addiction," they are most often connected with an "information overload." An "information pauper" lacks access to information and information resources, perhaps as a result of the so-called "digital divide," the socio-economic divide between those with access to technology and those without it (Bawden & Robinson, 2009, p. 181). An "information junkie" is addicted to the consumption of information and can't seem to get enough of it (Dean, 2015). As an addict, the information junkie desires an information "fix," and suffers "information withdrawal" without the stimulus (Dean, 1991; Bawden & Robinson, 2009, p. 185). Most constructs of information anxiety, however, are related neither to info-poverty nor to info-addiction but to "info-glut."

We live in an “information age,” an “information society,” and an “information economy” (Tidline, 1999, pp. 491-504). Modern technological capabilities have led to the proliferation of information and unprecedented access to it. Wurman explains, “We are like a thirsty person who has been condemned to use a thimble to drink from a fire hydrant” (Wurman, 1989b). Traditionally, social institutions like the universities and presses evaluated knowledge and served as gatekeepers, but now virtual institutions often manage information, or it is simply left unfiltered (Memmi, 2014). The over-abundance of information is known as the “information explosion,” “information inundation,” and “information excess” (Tenopir, 1990, p. 62; Heh, 2006, p. 20; Chamorro-Premuzic, 2014). Information glut (or info-glut) is caused by this “proliferation of available data and publications” as well as the “automated means of access to them” (Biggs, 1989, pp. 411-429; Riddle, 2012). Undesirable results include “data smog,” “infobesity,” and “infoxication” (Shenk, 1997; Rogers, Puryear, & Root, 2013; Chamorro-Premuzic, 2014).

Information overload is a bridging concept that merges the surplus of information (an external reality) with a psychological response of feeling overwhelmed (an internal reality). In other words, explains Janet Fox, “We’re caught in the gap between the proliferation of data and the knowledge of what to do with it all” (Fox, 1998, para. 4). Toniya Tidline has argued that the concept of information overload has not been adequately examined through empirical means. It is a myth, not in the sense that it is not true, but in the sense that it validates its own existence without requiring actual proof (Tidline, 1999, p. 486). A myth is an “emotionally charged” belief developed “in response to an overwhelming social process,” providing “an emotional outlet that confirms experience without tangible or rational evidence” (Tidline, 1999., pp. 489-491). Even so, the experience of information overload seems overwhelming to those weighed down by the burden of its sensation. David Bawden and Lyn Robinson (2009) have called it “perhaps the most familiar of the ‘information pathologies’” (p. 182).

The related concept of information anxiety remains difficult to define, because it has been “pursued and studied under various headings” (Girard & Alison, 2008, p. 112). Nevertheless, a working definition is necessary. In the online *BusinessDictionary*, information anxiety is succinctly defined as “the human cost of information overload” (“Information anxiety,” 2016). Joanna Burkhardt and Mary MacDonald have defined information anxiety as “a feeling of being overwhelmed that comes when confronting a large information task” (Burkhardt & MacDonald, 2010, p. 11). More picturesquely, Michael McCarthy refers to information anxiety as a “kind of stupor, a feeling that we simply can’t keep up, can’t read fast enough, don’t know how to locate the information we need, don’t have time to sort through or think about all the data surrounding us” (McCarthy, 1991, p. 12).

Causes and Effects

With this understanding of information anxiety in hand, we turn to its causes and effects. Fox describes four contributing factors. First, “both the volume and the speed” of information dissemination is accelerating. Second, our education and training do not prepare us “to deal with the information explosion.” Third, “most of the systems devised for managing time and organizing and storing information and resources” don’t fit “right-brain dominant” individuals. Fourth, “well-entrenched values, habits and attitudes that once may have been useful and desirable often get in the way of learning to cope with new realities” (Fox, 1998).

Information anxiety is associated with a sense of ambiguity or uncertainty (Eley et al., 2008, pp. 55-65). Causes of anxiety can include “siloes” information, too much information, unindexed information, and ineffective searching procedures (Linden, Ball, Arevalo, & Haley, 2002). John Girard and Michael Allison explain that “subjects are more likely to develop information anxiety as the tasks they are completing become more complex” (Girard & Allison, 2008, p. 113). In addition, info-glut is compounded by the explosion of “context-free” information (Jungwirth, 2002). Much of what passes as information today is depersonalized contextually and takes on a faceless force (Wurman, 1989b).

As Tyler Tate exclaims, “We are drowning in information at all points in our lives” (Tate, 2014, p. 17). This inundation has even been called an “information assault” (Wurman, 1989b). In 1996, Wurman referred to a tsunami of information flotsam and jetsam, “a tidal wave of unrelated, growing data formed in bits and bytes, coming in an unorganized, uncontrolled, incoherent cacophony of foam” (p. 235). The results can vary, including sensations of feeling overwhelmed or intimidated or fearful or lost or threatened or uneasy or stressed or uncomfortable or timid (Katopol, 2012, pp. 5-9; Tate, 2014, pp. 17, 20).

The condition of information anxiety often leads to frustration (Wurman, 1989b). Wurman provided a full list of telltale signs of information anxiety, including the following examples:

- Chronically talking about not keeping up with what’s going on around you.
- Giving time or attention to news that has no cultural, economic, or scientific effect on your life.
- Nodding your head knowingly when someone mentions a book, an artist or a news story that you have never heard of before.
- Being too afraid or too embarrassed to say, “I don’t know” (Wurman, 1989b).

And all of this can be compounded by a sense of loss of control or feeling “out of control” (Fox, 1998). We feel like cogs in an information machine as it grinds away with no shut-off button. According to Wurman, anxiety is worsened by the realization that “our access to information is often controlled by other people” (Wurman, 1989b). He explains, “We are dependent on those who design information, on the news editors and producers who decide what news we will receive, and by decision makers in the public and private sector who can restrict the flow of information” (Wurman, 1989b).

Information anxiety can affect all demographics of the population, from children to graduate students to business managers (Cooper, 2000, pp. 16-17, 63; Dale, 2001). It is a serious problem that affects individuals in both educational and professional settings (Eklof, 2013, p. 247). It can impair judgment and negatively influence both social and political activity (Williams, 2008). In the academic context of schools, colleges, universities, and other educational institutions, it impedes academic functioning and can cause long-term poor performance (Blundell & Lambert, 2014, pp. 261, 264). Info-anxious students often sacrifice their information seeking (by ending their research with minimal or poor resources) or sometimes abandon it altogether (Blundell & Lambert, 2014, p. 263). In extreme cases, info-anxiety can damage physical health (Ifijeh, 2010; Bawden & Robinson, 2009, p. 183).

Reception, Processing, and Application Difficulties

Information anxiety does not concern the sheer magnitude of information alone. Information anxiety also concerns the reception, processing, and application of information. As Wurman points out, the word *information* itself is an ambiguous term that has been “applied to define a variety of concepts” (Wurman, 2012). In fact, a shift in meaning has occurred. As Wurman explains, “The word *inform* has been stripped out of the noun *information*, and the *form* or structure has disappeared from the verb *to inform*” (2012). Wurman (2012) elaborates on this explanation by stating that “Much of what we assume to be information is actually just data or worse.” Wurman (2012) concludes this point by suggesting that “...in our information hungry era, [data] is often allowed to masquerade as information.” In this sense, much of the information glut is really “the growth of non-information” (Conhaim, 2001, p. 11). Traditionally, the term *information* implies the act of informing, which implies the act of communicating, which implies both communicator(s) and communicant(s). Communication is “an interactive process” (Wheless et al., 2005, p. 147).

Reception: Reception is the other side of the coin of communication. The informer communicates information, and the informed receives the information. But sometimes, “We read without comprehending, see without perceiving, hear without listening” (Wurman, 1989b). A specific hindrance related to the reception of information is “Informational Reception Apprehension” or IRA (Schrodt & Wheless, 2000, pp.

60–73; Schrodt & Wheelless, 2001, pp. 53–69). Various environmental and personal factors can lead to such information reception apprehension. Even the reader’s (or hearer’s) family background and family communication patterns can affect the reception and processing of information (Ledbetter & Schrodt, 2008, pp. 388–401).

Processing: Information must not only be gathered; it must also be processed. Daniel Memmi (2014) has described this process as “turning raw data into selected information, information into verified knowledge, and knowledge into plans of action” (p. 76). Info-anxious individuals struggle with making sense of raw data, and they may also struggle with assessing the quality of retrieved data. Even with increased technology, the personal integration of information requires human cognition. As Orrin Klapp declared, “Better information processing can speed the flow of data but is of little help in reading the printout, deciding what to do about it, or finding higher meaning. Meaning requires time-consuming thought, and the pace of modern life works against affording us the time to think” (Klapp, 1986, p. 112).

Application: A final set of difficulties concerns the application of information. Patrons can be frozen in indecisiveness, wondering how to apply the information they gather and process to their specific research question or life situation. This condition of indecisiveness has been called the “paralysis of analysis” (Ifijeh, 2010). According to the Association of College and Research Libraries’ *Framework for Information Literacy for Higher Education*, “Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (Association of College and Research Libraries, 2016). In reality, any aspect of this “set of integrated abilities” can cause apprehension (Katopol, 2012, p. 12). According to Wurman’s seminal volume, information anxiety falls into five subdivisions: “not understanding information; feeling overwhelmed by the amount of information to be understood; not knowing if certain information exists; not knowing where to find information; and knowing exactly where to find the information, but not having the key to access it” (Wurman, 1989a, p. 44).

The Role of Librarians in Reducing Information Anxiety

In seeking to alleviate the symptoms of information anxiety, librarians have marshalled “best practices” or “pragmatic solutions” or “strategies for intervention” (Bawden & Robinson, 2009, p. 188; Ifijeh, 2010). Individuals suffering from information anxiety often experience a feeling of uneasiness and apprehension. In response, librarians can provide a calm and safe environment of inquiry. Persons with info-anxiety sometimes suffer from a sense of a lack of control. Librarians can teach them navigation techniques that control information inquiry and intake. The info-anxious

can be overtaken by a feeling of being overwhelmed. Librarians can help them filter the information inundation. The info-anxious sometimes experience uncertainty, and librarians can help them think critically and discerningly about information, to train them to be confident in their information usage.

Coping Techniques. In a *Reader's Digest* article published the same year as his breakthrough volume on *Information Anxiety*, Wurman provided seven tips to help overcome information anxiety:

- Accept that there is much you won't understand.
- Plan an information strategy.
- Separate what you are really interested in from what you think you should be interested in.
- Moderate your use of technology.
- Minimize the time you spend reading or watching news that isn't germane to your life.
- Reduce your pile of office reading.
- You can always look it up (Wurman, 1989c).

Besides sharing these tips, librarians can assist patrons in other ways as well (cf. Calvacca, 1990).

Create a safe environment. Librarians can create a “safe” and “user-friendly” environment of inquiry, so that patrons feel comfortable with their library interactions (Aman, 2010, p. 123). Because library users are sometimes hesitant to ask questions for fear of appearing ignorant, librarians need to respect patrons and should avoid stereotyping them (Katopol, 2012, p. 13; Katopol, 2014, pp. 1-3). Librarians should understand the diverse needs of their clientele (Ifijeh, 2010). They can reassure library users by making them feel that their information questions are important (Eklof, 2013, p. 256). Librarians can provide a “personal touch” to the difficult task of confronting the faceless forces of the information flood. Librarians can thus combine “high tech” with “high touch” (Conner, 2014, p. 16).

Highlight realistic limitations. Librarians can remind patrons to accept their limitations and to embrace realistic expectations. When an individual has been hurt by a past decision, he or she may demand a surplus of information before making another major decision (Cooper, 2000, p. 16). Nevertheless, because we are all on a journey of learning and development, we should realistically accept our limitations. Social or personal pressure can sometimes tempt us to pretend we have more knowledge than we do. However, individuals need to know that a level of information anxiety is “normal” and “they are not alone” (Burkhardt & MacDonald,

2010, p. 11). Ashley Eklof counsels that “one of the best ways to overcome information anxiety, brought on by the desire to gather an infinite amount of information, is to realize that you will not be able to absorb all of the information to which you have access” (Eklof, 2013, p. 256). We need not only to “remember to remember” but also to “remember to forget,” because some information is not worth remembering (Pijpers, 2010, Chapter 7).

Begin with the known. Persons with information anxiety often fear the unknown or feel uneasy in the face of uncertainty or ambiguity (Eley et al., 2008). Librarians can begin by building on what patrons already know. As Wurman remarks, “Failing to make connections between the known and the unknown prevents us from grasping new ideas and new opportunities” (Wurman, 2001, p. 261). He therefore counsels, “You only learn things relative to something you understand” (Wurman, 2001, p. 267). Librarians can ascertain the current knowledge base of clientele, and then build upon that foundation. They can even use “comfortable” media like video-gaming quests to teach new information fluency skills (Clay, 2016).

Teach effective reading techniques. Librarians can teach patrons how to read effectively. Depending upon the purpose and context, sometimes alternatives to reading can be employed as time-saving devices. For example, patrons can be encouraged to try audiobooks, or to read twitter feeds that summarize best-selling books. Sometimes an author has personally written an article summarizing his or her own book. Furthermore, students can be encouraged to read mainstream articles in their field that highlight unknown acronyms. If an acronym has become mainstream, its currency reflects an assumption of shared knowledge (Kennedy, 2001, p. 41). Patrons can also be taught how to skim news for key concepts (Kennedy, 2001). Because information anxiety often involves a sense of a lack of control, the art of dealing with information anxiety “appears to be knowing how to strike a balance between taking control and letting go” (Conhaim, 2001, p. 11). This includes granting oneself the permission to “let go” of things that may appear to be interesting but are not (or should not) be a personal priority (Conhaim, 2001). Not every email needs to be read and not every book needs to be finished (Fox, 1998). Disciplined focus is required (Rogers, Puryear, & Root, 2013, p. 1).

Filter the info-flood. Librarians can also serve as guides that help patrons filter information. Tenopir notes that “the fundamental problem” isn’t so much finding information as it is “filtering” it (Tenopir, 1990, p. 64). If information anxiety is caused by feeling overwhelmed with information and an inability to process it, then a cure would be learning effective filtering and processing skills. Librarians, as “caretakers of information,” must become “facilitators of understanding” (Eklof, 2013, p. 247; VanPatter, 2013). Librarians can familiarize patrons with navigation procedures and can introduce them to support resources (Riddle, 2012). Librarians

can teach skills that differentiate between valuable and mediocre (or even worthless) information (Eklof, 2013, p. 257). They can explain the differences between various search engines, both popular ones and lesser known ones (Cooper, 2000, p. 17). And they can share the relative strengths and weaknesses of different databases (Tenopir, 1990, p. 63). The manner in which data is indexed can either increase or decrease information anxiety (Jørgensen & Liddy, 1996). Acquisition librarians can further help by choosing quality of resources over quantity (Ifijeh, 2010).

Share and model organization strategies. Sometimes information anxiety is compounded by disorganization. Therefore, librarians can share personal and academic organization strategies. These techniques can range from time management and time-saving strategies, to the structuring of research, to the orderly arrangement of papers. Moreover, not only can librarians teach organizational skills, they can also personally model organized habits. The library as a whole, the reference service area, and information literacy classes should all reflect orderly arrangement. Librarians can also teach critical thinking skills, which involve the structuring of logic and the systematic arrangement of argumentation (Eklof, 2013, p. 251).

Remain patient. The librarian's pedagogical manner plays an important role in the alleviation of information anxiety. Proper instructional techniques can reduce anxiety, while inappropriate instructional techniques (such as rushed instruction, complex explanations, or the unnecessary use of technical vocabulary) can actually increase anxiety (Presno, 1998). Verbally aggressive tendencies, intellectual inflexibility, and argumentativeness especially cause "information reception apprehension" (Schrodt & Wheelless, 2001).

Market services. Finally, librarians need to "market themselves aggressively as information experts" (Rader, 2004, p. 116). Unfortunately, "most information seeking transpires with little help from librarians" (Biggs, 1989, p. 411). In fact, many patrons do not even know that librarians can offer assistance with unfamiliar jargon or similar information-seeking difficulties (Katopol, 2012, p. 10). Therefore, librarians need "to establish themselves as primary information professionals" (Biggs, 1989, p. 411). They should be "on the front lines, fighting the good fight" (Kennedy, 2001, p. 41). Libraries may provide services to help cope with information anxiety, but if patrons do not take advantage of such services, they are not benefited and the resources have been needlessly wasted. Therefore, relevant services must not only exist, they must be marketed (Aman, 2010, pp. 151-162).

Conclusion

With the exponential growth of information in our contemporary age, many library patrons feel anxious or overwhelmed when faced with information-seeking tasks. This has been true for at least a generation. Tenopir notes that librarians are “both part of the problem and part of the solution” (Tenopir, 1990, p. 62). Libraries provide multiple modes of access to the glut of information, thereby indirectly increasing the information deluge. However, they can also teach patrons how to filter and process all the information that is accessible. In addition, they can provide a safe environment of information seeking and retrieval. Above all, librarians should adopt “a proactive response to information inundation” (Cooper, 2000, p. 17). Through effective training, library patrons can overcome information anxiety with information confidence. In our culture, the acronym TMI has become commonplace, meaning “too much information” (Bawden & Robinson, 2009, p. 184). Perhaps librarians can round a corner so that TMI can alternatively signify “trained to manage information.” †

ABOUT THE AUTHOR

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