

# Challenges for Human Information-Seeking Research In the Emerging Communication Environment

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## Abstract

This paper discusses the challenges of understanding human information seeking from the framework of Case's examination of thousands of studies and Hantula's plea for "newer understanding of the wisdom of older theories." This review of the opportunities, and the difficulties, of conducting communication research in the constantly evolving digital media environment uses news seeking from media organizations as the case study. The authors describe the unique challenges presented to researchers attempting to understand news seeking behavior and offer insights into "older" theories that may be successfully applied.

**Keywords:** Blog, weblog, mainstream media, new media, on line journalism, on line writing trends, Blog writing, blogger journalists, writing styles of blogs, media writing.

## Introduction

"It is now clear that new theories are not needed to understand new technology, but rather newer understanding of the wisdom of older theories is what is necessary." <sup>1</sup>

Human information seeking has been the subject of systematic research and scholarly publication for the better part of a century. Some studies focus on person-oriented questions which can be further distinguished by targeting how individuals approach a specific information task (How do lawyers make

sense of their information needs and environment?) or how individuals behave in a non-task environment (Why do TV viewers choose one program over another and what satisfaction do they get from it?) Other studies focus on system-oriented questions at both the task (How successful are student searches of a university library's web-based catalog?) and non-task level (What messages about drug abuse do teenagers attend to, in which medium, and why?).<sup>2</sup>

In his book, *Looking for Information: a survey of research on information seeking, needs, and behavior*, Donald O. Case summarizes eight lessons about human information seeking after his exhaustive review of thousands of studies in the field:<sup>3</sup>

1. Formal sources and rationalized searches reflect only one side of human information seeking. Many people use formal sources rarely, and there are inherent inefficiencies in least effort seeking, which is not irrational but a reasonable approach in many circumstances.
2. More information is not always better. Ignoring or avoiding information is at times a rational strategy for living and working, especially when it promotes psychological coping.
3. Context is central to the transfer of information. The individual's definition of the situation will shape his or her information needs as much as does the real situation itself. The information we bring to bear on information in creating meaning from it includes our accumulated personal experiences and secondhand experiences, including our understanding of the world and of language.
4. Sometimes information - particularly generalized packages of information - doesn't help. Even when individuals really do need information, the chunks of it encompassed by books, articles, TV programs, etc. may not provide the answers they need.
5. Sometimes information is not available or accessible. Formal systems will never be able to satisfy most information needs, but we act as if we expect them to.
6. Information seeking is a dynamic process. Needs change quickly and studying a shifting scenario leads to a tendency to look at an information seeking episode as something simple, linear and complete. It isn't that straightforward.
7. Information seeking is not always about a "problem" or a "problematic situation." Some information-related seeking is truly creative in its origins - information seeking is much more than solving problems, finding facts or making decisions.
8. Information seeking is not always about "sense-making" either. The study of information seeking is still largely the study of sources. Speculation about the inner desires of the public for information, entertainment and transactions adds to the research findings and introduces new research theories, methodologies and findings. However, life is not entirely about uncertainty, gaps or discontinuities either. For certain problems, it remains useful to think in "old" terms like source preference and audience segmentation.

Case raises issues important for both library and information science scholars and for communication researchers interested in understanding how and why people seek information. Given the current state of knowledge in the human information seeking field and the rapidly shifting information environment, it may be time to pause and consider some of the challenges scholars face in trying to advance our understanding.

## **Factors that make human information seeking research challenging**

### *Theoretical divergences.*

As suggested in the introduction, there are many different approaches that inform human information seeking research and these approaches cross multiple disciplines and research paradigms. As is the case in most disciplines, there is no “unifying theory” of human information seeking. Researchers interested in this field of study face the challenge of placing their work in the appropriate theoretical construct, while also attempting to conduct a thorough and comprehensive review of existing scholarship on their topic. The sheer number and diversity of theoretical approaches to the topic make it difficult to know where to begin.

Furthermore, researchers face the challenge of deciding whether their work on human information seeking should focus on person-oriented questions or system-oriented questions, both of which may be relevant and useful for any given project but which impose different types of requirements on the scholar for the design and implementation of a study. As Case points out, a focus on both sources of information and the sense-making aspects of information seeking can inform our understanding, but are difficult to include in any one, or even a series, of studies.

### *Changing technology landscape.*

The number and complexity of devices on which people access information have increased dramatically in the past decade. There is no reason to think this technological explosion will slow in the coming years. The range of possible questions about information seeking from websites has hardly been considered and the ones about mobile information applications have not yet been raised.

The days when a researcher could focus on a well-defined information source ecology (word-of-mouth, newspapers and magazines, television, radio) are long gone. Any study of human information seeking now must factor in the traditional mediated and non-mediated sources, as well as the vast array of new means by which people gather, exchange and interact with information. Further complications ensue when considering individuals’ use of the same types of information from the same sources but delivered through a different appliance. Asking respondents about their use of mobile devices to monitor news, for instance, is a moving target. From smart phones to tablets to whatever the next new gadget might be, respondents have a dizzying array of choices and combinations. The researcher attempting to study behavior across time, for instance, is challenged by the way these technological developments influence data collection and analysis.

Changing types of information made accessible by information providers. Along with the proliferation of devices on which to access information, there also is a growing array of information/data types that information seekers can access. For example, news media organizations are scrambling to find the monetary and service opportunities in making available the vast quantity of information that was left “on the cutting room floor” because of the publication’s or broadcast’s space or time constraints. Additionally, researchers now have access to data types such as weblogs, RFID, sensor networks, social data, social networks, Internet search indexing, photo/video data, streaming API, etc. that were not previously accessible. In an earlier time, these proliferating data types may not have been recognized as appropriate for the study of human information seeking even if they were accessible.

### *Proliferating sources of studies.*

Because understanding human information seeking is interesting to so many different types of organizations, institutions and individual researchers, the number and variety of sources of research are expanding. For-profit and non-profit media organizations want to learn how to better reach their target audiences and generate revenue. Scholars from a large swath of the academy want to examine this area of human activity from their specific disciplinary and theoretical perch. Think tanks, some with a specific agenda that reflects the source of their funding or the point of view of their benefactors, want to weigh in for their own purposes. Foundation-supported research organizations such as the Pew Internet and American Life Project and related entities are documenting human information seeking as a form of “public scholarship” intended, in part, to aid policy making.

All of these sources of research are legitimate and valuable contributors to the knowledge base about human information seeking. However, the number of entities, the variety of research approaches and the funding sources for the studies challenge the academic scholar to stay on top of it all.

### *Changing respondents.*

Information seekers themselves continue to evolve in their interests, needs, wants and expectations. No longer relegated to simply consuming, information seekers now expect to be part of the production of information. A researcher may be studying individual-oriented questions that must take into account the way new tools and social practices are changing people’s information behavior. For example, the Public Media 2.0 report outlines five ways people are now engaging with media: choice, conversation, curation, creation, and collaboration.<sup>4</sup> Any study of human information seeking as it relates to media use must take into account these activities, some of which were not readily part of information consumers’ behavior just a few years ago. Likewise, a researcher may be studying system-oriented questions that must take into account new standards for defining the information ecology. For example, the findings and recommendations from the Knight Commission on the Information Needs of Communities in a Democracy include a checklist for a “healthy information community,” some aspects of which would not have been considered in the past. Benchmarks such as “A majority of government information and

services [are] online, accessible through a central and easy to use portal,” or “High-speed Internet is available to all citizens”<sup>5</sup> change the game for researchers trying to understand how well an information ecology serves the human information seeking it is supposed to enable.

### *Methodological issues.*

A clear and growing challenge to researchers looking at human information seeking focuses on the methodological issues they face. Huge data sets, never before conceived of much less made accessible for analysis, are now there for the taking (sometimes for free, sometimes for a cost). Archives of tweets, Internet searches, usage data, raw video feeds, and much more provide an incredible insight into human information seeking, as long as the researcher can collect and analyze it. Complex tools for analysis of enormous data sets (e.g. Hadoop and similar systems) demand expanded computing resources, different types of analytical expertise and new ways of thinking about what all the collected “stuff” means. Most researchers are still at the very earliest stages of developing the appropriate levels of computing support and analytical expertise to make sense of these new data.

### *Terminology issues.*

Again, because human information seeking research encompasses so many different academic perspectives, theoretical approaches, research methods and levels of analysis, scholars sometimes find it difficult to know whether they are talking about the same thing. What is the difference between scanning, browsing, foraging, or sensing when discussing human information seeking? What is the difference between relevance, pertinence, or salience when trying to evaluate the “success” of an information seeker’s attempt to meet a need? Even as seemingly basic a term as “information” is subject to a huge number of debates and interpretations. Any scholar attempting to set sail in human information seeking waters had better have a very good set of navigation charts just to decipher the names of the features on the map.

## **Factors that challenge academic researchers**

Academic researchers interested in explaining human information seeking not only have a difficult time constructing effective research agendas due to the factors stated above, but they also have to deal with a variety of challenges in their roles as researchers, particularly in understanding human information seeking in light of new media production and delivery channels.

### *Making research relevant - theoretical versus practical research.*

In a highly controversial September 2012 posting on the blog sponsored by the Knight Foundation (a major funder of journalism programs and initiatives) Eric Newton states,

“Much has been written of late about the relatively low quality of academic research in the journalism and mass communication field. Since this is a critical time, the dawn of a new age of communication, there’s much to learn. The research gap is a major source of disagreement between professionals and scholars. Professionals argue that much research is unreadable and, frankly, useless. If you take the time, scholars counter, you’ll find important insights.”<sup>6</sup>

Despite the legitimate criticism aimed at this simplistic framing of the issue, Newton’s statement sums up a dilemma for academic researchers – to create research agendas that will pass muster in the peer-reviewed publication process and reflect well in their vitas, or to examine industry issues and provide insights to professions needing guidance on best practices. The implied conclusion in Newton’s post was that large foundations such as Knight might begin to withhold resources from programs and researchers who can’t translate their work into practical value for the professions that generate a huge percentage of the information that is studied by human information seeking scholars. Researchers, particularly in the liberal arts, have rarely had large grants available to them for ambitious research agendas and have often steered clear of industry funded work that might compromise their research findings. Now, as the communications industries struggle to understand the expectations and experiences of information consumers, scholars are being urged to provide research that will deliver practical recommendations and insights translated from academese to actionable bullet points. While these two research missions – peer-reviewed theory-building and practical recommendations for industry application – are not mutually exclusive, the lack of respect between the “camps” creates complications for researchers.

*From open source to monetized / privatized communication streams.*

The “golden age” of research on burgeoning modes of communication has lost some of its shine as the start-ups and open source projects creating information of interest to researchers become large revenue driven enterprises. A case in point is the access that academics had to Twitter in the early years of its operation. Researchers were “whitelisted” and could, through a free API, access large sets of Twitter feeds for analysis. But that sort of access to the “firehose” has been restricted, as this post on Quora by John Kalucki, then Engineering Lead / Manager – Content at Twitter, states:

While there has been some useful research performed on Twitter data, the vast majority of it has not been particularly useful. We simply don’t have the resources to divine the

potential of various projects, so we've, in some sense, moved that decision making back to the grant-making process where it probably belongs.<sup>7</sup>

Twitter has closed off "firehose" access to all but those who have the resources to purchase Twitter feeds. Through Gnip, the Twitter "halfhose" now costs \$360,000 per year. This means that only marketers with deep pockets or researchers with large grants are the most likely users of these data sets in the future.

Again, this demonstrates the "between a rock and a hard place" situation in which academic researchers in this area find themselves. They can potentially get funding for "applied" research that informs industry (and opens up access to the raw material needed for their research) but that type of research may not be as highly-valued in the academic environment in which most scholars' work is evaluated.

*Information organizations' reluctance to be examined.*

Many start-up information companies are privately-held and, therefore, are not required to share much in the way of financial information. For the most part, because of the highly competitive marketplace (and the high failure rate of start-ups) they also are reluctant to share hard data about their consumer base, their operating procedures, or their internal issues. This lack of access makes it all the more difficult for scholars to secure reliable information or to get permission to contact users for research purposes.

Social scientists have long complained about the lack of access to the data underlying social networking sites' claims about their customers. An article in Nature indicates that might change.

"Nature has learned that the social-networking website [Facebook] is considering giving researchers limited access to the petabytes of data that it has amassed on the preferences and behaviour of its almost one billion users.... Facebook's in-house scientists have been involved in publishing more than 30 papers since 2009, covering topics from what drives the spread of information and ideas to the relationship between social-networking activity and loneliness. However, because the company fears breaching its users' privacy, it does not release the underlying raw data. Facebook is now exploring a plan that could allow external researchers to check its work in future by inspecting the data sets and methods used to produce a particular study. A paper currently submitted to a journal could prove to be a test case, after the journal said that allowing third-party academics the opportunity to verify the findings was a condition of publication. "We want to participate in the scientific

process and we believe that there should be a way to have other researchers validate [our studies] without infringing on the policies that we have set with our users,” says Cameron Marlow, head of Facebook’s data-science team.”<sup>8</sup>

However, control over access to the data is clearly in the hands of the proprietary researchers and is not freely given to independent, academic researchers. Facebook requires researchers to go to Menlo Park to see the data and spend a limited time examining the data. The data will be aggregated, and researchers must sign a non-disclosure agreement to gain access to the company’s data. These restrictions make Facebook’s “access” decision more a public relations move than actual support of the research community’s independent research objectives.

Traditional media companies also are reluctant to share information with researchers. While these organizations collect vast amounts of real-time data about visitors to their web sites, clicks on advertising, user behavior in sharing or forwarding information, mobile access to their news and advertising content and other activities, these data sets are typically considered proprietary and are unavailable for examination. Google Analytics data are being used extensively by media organizations, but these are tightly controlled and unlikely to be shared with outsiders.

*Information seeker reticence to share their processes and thinking.*

Just as many of the important information providers are reluctant to share data gathered from and about their activities, many information seekers are equally reluctant to have their behavior monitored. The privacy concerns raised by “Big Data” are alarming not just to watchdog agencies and activists, but are becoming more salient for the average person on the street as well. Finding respondents who are willing to participate in studies examining information seeking has always been a challenge, but may become more difficult as these privacy concerns gain traction.

Additionally, scholars are challenged by the increased scrutiny imposed on any type of research that involves human subjects — IRB and human subjects rules and regulations seem to proliferate as fast as the research questions are posed. Researchers may gather data through a “passive” means such as by an automated capture of information flow through a specific system, or through a more active method such as interviewing, eye-tracking, or similar methods that require the real-time participation of the respondent. The issues that confront the researcher in the human information seeking area of work (from the authentication of research subjects recruited online to the administration and archiving of the collected data) are more complicated than in some other areas on which communications scholars might decide to focus.



## Case's "lessons" in the context of news-seeking

Our particular focus as researchers interested in human information seeking is on news. We have both a scholarly and a secular stake in the health of public affairs journalism and the organizations (traditional or not-yet-invented) that generate news content necessary for democracy to function. We aren't concerned about legacy media organizations per se, but rather that the function of journalism maintains its essential role. Hence, we are interested in studying human information behavior in seeking and using news information for a variety of purposes and via a variety of tools, devices, strategies and channels of delivery. For the remainder of this paper, we will examine the eight lessons of information seeking research identified by Case and discuss the research challenges in the context of news seeking.

**Case Lesson One:** *Formal sources and rationalized searches reflect only one side of human information seeking.*

Many people use formal sources rarely, and there are inherent efficiencies in least effort seeking, which is not irrational but a reasonable approach in many circumstances. The Pew Research Center for The People & The Press report on "Trends in News Consumption: 1991 - 2012" may provide proof of Case's first lesson of human information seeking. Among its findings are these:

"Among adults younger than age 30, as many saw news on a social networking site the previous day (33%) as saw any television news (34%), with just 13% having read a newspaper either in print or digital form,"<sup>9</sup>

"About a third or more of those ages 18 to 39 regularly see news or news headlines on social networking sites."<sup>10</sup>

Apparently, younger adults rely less on "rationalized searches" for news. Instead, they may be applying the notion stated by a college student in a focus group on news consumption, "If the news is important it will find me." The "inherent efficiency" of letting your social network bring you the news is an intriguing one for news organizations exploring how to reach audiences, and this finding may be good news for traditional media organizations.

But herein lies the problem with the Pew study. It does not identify the source from which users of

social networking sites are getting their news updates - only the channel through which they are getting it. Are they "following" news organizations' tweets? Are they "friending" journalists? Are they reading the updates from friends and family who post a link to a news story on a social network? Who is setting the news agenda - journalism organizations or social connections?

If we were to apply the "wisdom of older theories" as Hantula advises, a re-examination of the agenda-setting theory, described by McCombs and Shaw<sup>11</sup> as "the ability of the news media to influence the salience of topics on the public agenda," is required. Researchers need to study the process used by those who are choosing news items to share and understand the degree to which those choices are setting the agenda of their own personal and professional networks.

### **Case Lesson Two:** *More information is not always better.*

Ignoring or avoiding information is at times a rational strategy for living and working, especially when it promotes psychological coping. Much communication research focuses on how and why people selectively filter information or actively avoid information. Psychological theories about selective exposure have long demonstrated that in general and over the long term, individuals drift toward information that supports their point of view.<sup>12</sup> Other research has demonstrated that some individuals actively avoid information, especially in the context of possible health threats or disturbing information about a medical condition.<sup>13</sup>

In the context of news consumption in the current media environment, research might focus on whether and how individual news consumers are managing their "information diet" in an age of overwhelming abundance. One study found that the preferred form of news story about a complicated topic was one that provided a list of "quick facts" accompanied by a set of issues related to the topic called out in boxes, not the more expansive, traditionally written news story. The issues boxes included a summary of that issue and links to related news content.<sup>14</sup> This might imply that news consumers are seeking an information diet that provides relevant information, but one that limits the amount of material and the exertion of effort needed to "get the gist." What does this form of information delivery do to the public's understanding of complicated topics? What are the implications for newsroom operations that still believe that the value they provide is the depth of treatment and coverage they provide?

Another long-standing theory that might shed light on this new environment is the social construction of reality. In that field, scholars believe that the general effect of most media consumption is reality fragmentation. Media consumers are presented with a confusing view of the world in part because of the strategies and norms of news production. Preoccupation with immediacy, focus on surface meaning, episodic treatment of complex topics with little or no background, emphasis on individual actors over the political contexts in which they operate, and related journalistic norms work against deep understanding.<sup>15</sup>

The loss of a distinction between entertainment and news is another effect of the disintermediated environment in which we now find ourselves. “Ideally, a media system suitable for a democracy ought to provide its readers with some coherent sense of the broader social forces that affect the conditions of their everyday lives.”<sup>16</sup> Under conditions of information abundance, where much of the content is unmoored from its original source and its initial context, can media consumers make any sense of reality?

**Case Lesson Three:** *Context is central to the transfer of information.*

The individual’s definition of the situation will shape his or her information needs as much as does the real situation itself. The information we bring to bear on information in creating meaning from it includes our accumulated personal experiences and secondhand experiences, including our understanding of the world and of language.

Context can refer to a variety of factors with regards to news seeking. Studies of both the demographic and psychographic characteristics of news audiences attempt to inform media organizations about their consumers. Some studies, such as the Pew Research Center report *How People Get Local News and Information in Different Communities*,<sup>17</sup> look at media use through the lens of community type. Their findings focus on regional differences in local news consumption (urban residents use a wider combination of platforms and a more diverse selection of digital resources than rural residents who rely on traditional platforms like newspapers, television.) Other studies focus on the psychographic context for news selection, as when more politically engaged partisan respondents select news based on the news source’s anticipated agreement with their political affiliation.<sup>18</sup>

Then there are the myriad studies looking at differences in media consumption and information seeking behavior by gender, age, income and other factors. Do these studies shed more light on news seeking behavior or do they provide so many ways to slice and dice the audience that it is difficult to see a full portrait of the media user among all the slivers?

The situational context to which Case refers is the more interesting, and difficult to measure, condition to examine when looking at news seeking. The Uses and Gratifications theory,<sup>19</sup> with its emphasis on understanding the motivations behind selection of one source for satisfying an information need over another, might be a good model for reflecting on the situational context. The challenge with applying the Uses and Gratifications theory to new communication technologies use is determining the significance of data now available to researchers through web analytics and other captures of user behavior. Past measures of “gratification,” such as time spent with a newspaper, might well differ in the context of a website where, in fact, the time spent on a site might indicate frustration and inefficiency with the information search rather than satisfaction.

**Case Lesson Four:** *Sometimes information - particularly generalized packages of information - doesn't help.*

Even when individuals really do need information, the chunks of it encompassed by books, articles, TV programs, etc. may not provide the answers they need. Information seekers are increasingly relying not on formalized sources of information; rather they are finding the feedback and advice they need from recommendation sites, and Q&A fora such as Quora and Mahalo. One response on the Quora site's question, "Why are question and answer sites....so popular right now?" summed it up: "Google helps us find information. These types of sites help us find answers." This, in some ways, is bundled into Case's Lesson Three about situational context - being able to ask, and get answers, to a highly personal, specific question provides a greater sense of relevance than a more formally packaged, and possibly more thoroughly researched, report from a news organization.

This also raises the question of objectivity over subjectivity as a value in information. The very nature of the Q&A site is subjective - people are speaking from their personal experience, background, and knowledge set. One of the core characteristics of material produced in a journalistic context is objectivity. Is this value losing its luster in the age of social networking where it is the personal connection (however superficial) that holds more power than the institutional voice of a media organization?

Studies of source credibility have been a theoretical tradition since Hovland's studies of propaganda in World War II.<sup>20</sup> This framework for looking at how reliance on recommendation and Q&A sites could be fruitful because of its focus on perceived expertise and trustworthiness of the source. Media organizations pride themselves on their expertise, but as public trust in media content declines, this confluence of expertise and trust provides a rich area for examination.

**Case Lesson Five:** *Sometimes information is not available or accessible.*

Formal systems will never be able to satisfy most information needs, but we act as if we expect them to. As so much research has documented, individuals mostly prefer and use "non-formal" methods of meeting their information needs. Word-of-mouth and discussions with friends, family and associates, now amplified by social media platforms, are still the most important means for people to find out what they need to know on any given day. We are missing a huge portion of the way people use information in the real world when research focuses on formal systems such as news content delivered through the variety of platforms — print, online, mobile — that are now so ubiquitous.

Here we may be able to use theories that focus on the importance of language and social interaction in the formation of knowledge and in decoding human information seeking. For example, Given examined

undergraduates' accounts of their information practices, and determined that students' everyday information needs informed their academic work in information seeking.<sup>21</sup> Another study by the same researcher, teased out the role of social capital in information seeking.<sup>22</sup> Student respondents drew on their social connections and their personal sources of information to meet many of their needs.

One of the challenges posed by the new information environment is that the sheer number and variety of both formal AND informal sources and systems of information have made an already difficult research task even more difficult. Scholars trying to accurately document the full range of individuals' information diet and behavior have always faced the challenge of capturing that in a reliable and valid way. The difficulty of this now is multiplied many times over.

Researchers attempting to understand whether formal news systems meet individuals' information needs in this new environment will need to monitor many more "channels" than in the past. And as Case's Lesson Four discussed, it may be that formal news systems aren't even in the top ten as sources of information on a day-to-day basis for most people. The concept of everyday life information seeking<sup>23</sup> could be helpful in this area of research.

**Case Lesson Six:** *Information seeking is a dynamic process.*

Needs change quickly and studying a shifting scenario leads to a tendency to look at an information seeking episode as something simple, linear and complete. It isn't that straightforward.

This lesson is probably the most important for news organizations trying to figure out what to deliver when and to which platform. When media organizations concerned themselves only with packaging one newspaper or producing one news broadcast, understanding the flow of user engagement was "simple, linear and complete." Now seekers of news hop between a variety of platforms exhibiting somewhat different behavior depending on the appliance on which they find their news sources.

The Pew Research Center's Project for Excellence in Journalism publishes an annual State of the News Media report. The 2012 report provided a detailed analysis of the platforms news consumers use, and how they use them. In the report they note the growing number of people using two or more appliances (desktop / laptop computer, smart phone, tablet) for their news consumption and the variety of methods by which they identify news content on each platform (keyword searching, going to a news organization's homepage, using a specific organization's news application, or using a curation application like Flipboard.)<sup>24</sup> The findings indicate that the "linear" path into news is a thing of the past.

As the number of people who have the option to use any or all of these appliances grows, studies such

as this provide interesting baseline statistics on the decidedly non-linear path by which people find and consume news. But it is still systems-based rather than based on delving into the motivations for seeking the information or the kind of information that is being sought. To truly document the shifting news needs of the audience, further study of what was in television broadcasting called “dayparting” — funneling content to the target audience based on an understanding of information interests at different times of day — might be applied to the activities of news organizations and the information behavior of individuals.

**Case Lesson Seven:** *Information seeking is not always about a “problem” or a “problematic situation.”*

Some information-related behavior is truly creative in its origins - information seeking is much more than solving problems, finding facts or making decisions. One of the defining features of the digital environment is that the raw material of words, images, sounds and video are all so easily downloaded, curated, and shared. This has fostered a creative culture in which people can develop their own niches of interest (and find others who share those interests.) The information seeking that someone does to answer a question needed to complete an assignment or fill some knowledge gap is very different from browsing for images to add to a Pinterest page.

Lavrusik described the difference between “search and social” in a posting on Mashable.com. “Search points to content that has been made, while social enables users to create content on the platform itself.”<sup>25</sup> This urge to create something new from a recombination of old material is certainly not without an analog precedent (ie: collages.) What is different is the accumulation of social capital through social creating. News organizations have modeled themselves for decades as producers and distributors of news and information. They are now trying to figure out a new role as convener of conversations of importance to a community. The goal is to open up the organizations’ traditionally closed news production process to, in the words of media scholar Jay Rosen, the “people formerly known as the audience.”

Research into whether, and how, media organizations’ abundant material could be more readily drawn into the social creation mix would be useful, if only to help guide those organizations’ efforts to remain relevant in this new environment. The various permutations of Bourdieu’s social capital theory<sup>26</sup> might help inform studies here. For example, “crowdsourcing” investigative reporting projects is valuable to both news organizations, who gain the added effort and knowledge of the audience, and to the individuals who participate and thus gain social capital by being recognized as contributors. Media organizations might benefit from a system such as the “mayor” designation for Foursquare check-ins by applying the concept to audience contributions in advancing stories or monitoring a beat for leads that can’t be followed by the formal reporting staff. This goes far beyond the “discussion board” access for public comments that most news organizations provide. What motivates such public-affairs-minded behavior and how could it be encouraged and nurtured?

**Case Lesson Eight:** *Information seeking is not always about “sense-making” either.*

The study of information seeking is still largely the study of sources. Speculation about the inner desires of the public for information, entertainment and transactions adds to the research findings and introduces new research theories, methodologies and findings. However, life is not entirely about uncertainty, gaps or discontinuities either. For certain problems, it remains useful to think in “old” terms like source preference and audience segmentation.

Dervin, in her work on “sense-making,” argues that information needs really begin with a compulsion to make sense of the current situation.<sup>27</sup> The individual’s emotional state in searching for meaning is about reducing anxieties as much as it is meeting a specific “need.” Savolainen<sup>28</sup> and others studying everyday life information seeking have applied the “sense-making” construct to examine the ways individuals navigate their information environment outside the traditional focus on the use of information from libraries, news sources or other formal systems.

For researchers interested in the influence of news as part of human information seeking, however, it is still helpful to think about sources in addition to individuals’ emotional states as they seek information. But the current environment poses many complications in even decoding the source of the information. In asking a respondent to report on how she learned about a news event, she might reply “It was on Facebook.” For the researcher studying formal news sources, that isn’t the “right” response to the source question. The respondent hasn’t recognized that the story may have been created by a traditional media organization such as the New York Times or CNN and she merely got access to it through Facebook. Can respondents even be clear in identifying the source of a news story? It is unlike the “old days” when it was easy to know whether you read it in a newspaper or heard it on the radio (the source and the delivery channel were one in the same).

Nevertheless, some of the most interesting research questions about the use of news in human information seeking focus on this blending, merging and morphing source environment. Future research should be designed to take into account the multiple delivery systems that now put formal news stories in front of information consumers. News alerts, RSS feeds, re-tweeting, and services such as FlipBoard make it difficult for even the most savvy news consumer to sort out where a specific story originated. But researchers must attempt to tease that out, even if respondents can’t do it themselves.

Aside from the technology issues, there may be fruitful work to be done by harking back to something as “old-fashioned” as reference group theories, including the notion of opinion leaders,<sup>29</sup> in examining the role of social media in directing individuals’ attention to some types of news content over others. Especially as traditional news organizations seek to evolve, or as yet-unborn organizations take on the role of gathering and disseminating news, understanding how to meet the information needs of people how and where they live will be crucial.

## **Meeting the challenges of human information seeking research: practical or quixotic?**

This paper led with Hantula's exhortation that researchers not forget time-tested theories in their endeavors to understand new media phenomena. His quote did not acknowledge, however, the very real challenges communication researchers face. We've identified tremendous opportunities for developing research agendas: the abundance of available data, readily accessible pools of research participants online, and a wealth of problems that media organizations face in charting out new strategies. But for each of these opportunities, there are challenges in "identifying the objects of study", and in examining constantly shifting "communication infrastructures and systems."<sup>30</sup>

This review of the field is limited by our attempt to bridge communication and library/information science research. Library and information science research has historically focused more on documents, information resources and retrieval systems while communication research in information seeking behavior has historically been more concerned with processes and motivations. This essay has just scratched the surface of both disciplines' approaches and theoretical constructs, some of which may be difficult to apply across disciplinary boundaries.

Research that measures information seeking behavior at a certain point of time or for a specific type of search is demonstrably possible and easily facilitated in the current environment as more sophisticated tools for data collection and analysis are readily available. More quixotic is the ability to interpret, provide insight into, and build theory about human information seeking in an environment that is undergoing such constant change and where the realm of potential behaviors is so expansive.

This type of research requires a concerted effort to understand the interplay of the mechanics of information seeking (appliances), methods (searching for topics, going straight to trusted sites), motivations (why is the user seeking information, what do they hope to do with the information they find), and material delivered (news stories, specific advice, leads to more sources of information.) This complicated combination of factors defines information seeking behavior that news and information providers must understand in order to develop successful strategies. This would be approaching a unified theory of human information seeking, which doesn't currently exist. Directions for future research, outlined in each of the "Lessons" above, point toward several academic lifetimes of work for those who would like to pursue this agenda.

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