

The Sense-Making Approach and the Study of Personal Information Management

Kristina M. Spurgin
University of North Carolina at Chapel Hill
School of Information and Library Science
CB #3360, 100 Manning Hall, Chapel Hill, NC 27599-3360
kspurgin@email.unc.edu

ABSTRACT

Some assumptions of Dervin's Sense-Making Approach are presented. Examples of applications of the approach to the study of personal information management are discussed.

Categories and Subject Descriptors

H.1.1 [Models and Principles]: Systems and Information Theory.
H.3.2 [Information Storage and Retrieval]: Information Storage. H.3.3 [Information Storage and Retrieval]: Information Search and Retrieval.

General Terms

Human Factors, Theory.

Keywords

Personal information management, Sense-Making metatheory and methodology, research design, methods.

1. INTRODUCTION

The Sense-Making Approach is a set of meta-theoretical assumptions that lead explicitly to an overall approach to doing methodology that suggests appropriate methods of framing questions, gathering data, and conducting analyses for arriving at substantive theory. The approach has been under development, primarily by Brenda Dervin, since 1972. It originally grew out of Dervin's work in communication research, but it has guided communicative approaches to research in various other disciplines, most notably information needs and uses. The process of seeking out and making sense of information is seen as a communicative practice.

The Sense-Making Approach seems promising for deepening our understanding of personal information management (PIM) from the user perspective. Given the complexity of the approach and its lengthy development, it is impossible to describe it in depth here. What follows is a brief and necessarily simplified presentation of

some of the approach's main assumptions--and the mandates that follow from them--that are useful in thinking about PIM. Intermixed with these are ideas about how PIM can be (and in some cases has been) usefully framed through the lens of the approach.¹

2. SOME ASSUMPTIONS OF SENSE-MAKING AND IMPLICATIONS FOR THE STUDY OF PIM

2.1 Discontinuity or "gappiness"

Sense-Making's core assumption is that of discontinuity. There are gaps between entities, time, and spaces. Each individual is an entity moving through time and space, dealing with other entities which include other people, artefacts, systems, or institutions. The individual's making of sense as a strategy for bridging these gaps is the central metaphor of the Sense-Making Approach.

Overall, doing PIM can be seen as a response to this gappiness. In this way, PIM itself is seen as a sense-making strategy. PIM is a response to the need to bridge the gaps between self (and self's situated needs and understandings) at different points in space and time. Making keeping and management decisions allows present self to provide for communication with the future self. Re-finding information in a personal information space is an example of present self in dialog with past self.

Doing PIM, like any activity, can also be seen as an ongoing process rife with gaps. A Sense-Making Approach to the study of PIM will illuminate strategies used to bridge these gaps, furthering our knowledge not just of what people do when they manage information for personal use, but why they do it in those particular ways. Understanding the types of gaps faced in the processes of PIM may inform the design of PIM systems that will interface naturally with the experiences, needs, and desires of individuals.

2.2 Information as process, not transmitted object

The concept of information as objective, transmitted thing independent of the individual human has been useful and necessary in designing and evaluating the mechanisms of communicative and informative systems, however Sense-Making

¹ The description of the Sense-Making Approach presented here is derived primarily from [4], but is informed by the entire book in which that chapter appears [6]. Reference has also been made to [5].

rejects this as a useful conceptualization for studying how humans experience and use information in their lives. Sense-Making conceptualizes information as “that sense created at a specific moment in time-space by one or more humans.” Human perception and understanding of messages are not absolute; each of us must make sense of what we encounter.

In Sense-Making, information is not seen as a message transmitted directly from a sender to a receiver like a brick being dropped into a bucket. Using this approach, a personal information space must not be conceptualized as a bucket into and from which pieces of information are simply dropped and retrieved. The processes of finding, making sense of, making decisions about, organizing, managing, and remembering the information objects that we tend to study in PIM add important information in the personal information space. All of this must be taken into account in our studies of PIM and the tools that we develop to help people manage their information.

2.3 Focus on verbings, not nouns

The conceptualization of information as process leads directly to Sense-Making’s focus on “verbings” rather than nouns. A Sense-Making Approach requires a focus on what people do, how they do it, and why they do it that way, rather than on the objects that people do things with. Much PIM research is framed in terms of nouns: email, bookmarks, files, and folders. However, PIM research has often attended to process. We commonly talk about PIM in terms of finding, reminding [1], filing, piling [8], keeping, organizing, managing, and re-finding [3]. With its focus on verbings, Sense-Making lends itself to the more detailed and systematic study of such processes.

2.4 The individual at a moment in space and time

The Sense-Making Approach assumes that individuals move through space and time. Depending on how the individual experiences and defines the particular space-time situation in which he finds himself, he will react differently. Sense-Making studies in communication and information needs and use have found that patterns of gap-bridging behavior are better predicted by the way individuals define the gaps in which they find themselves, than by any attributes that might typically be used to define individuals across space and time, such as demographic categories or personality indicators. Situations and people are constantly changing, but patterns of interaction between people and situations as they are defined by people seem to be somewhat more stable.

Used in PIM research, a Sense-Making Approach could help us begin to understand the common types of gaps that people experience that lead them to do PIM, and the types of gaps they experience while doing PIM. Then, we could begin to understand and predict the likely responses that people have to these gaps. Due to what appears to be overwhelming individual variation in PIM practices, and the highly personal nature of PIM, it is difficult to develop widely useful PIM tools, evaluate those tools, or think about ways to teach PIM strategies. If patterns of behavior in response to different types of gaps emerge across individuals in PIM, as they have in other areas that have been studied using a Sense-Making Approach, it could be very helpful

in advancing the study of PIM. This could help us identify reference tasks for conducting evaluation [7], requirements for PIM tools that could be useful in different gap situations, and teachable strategies for PIM that would be useful across individuals.

2.5 The individual as expert and theorist

Sense-Making assumes that each individual is the expert on his own world, or experience of it. Since each individual is involved in developing strategies for bridging his own gaps, each individual consciously or unconsciously theorizes why certain strategies are appropriate or useful for him. A researcher using the Sense-Making Approach must take care to frame research questions and gather data in such a way that the expertise of the individual participant in the research can be uncovered and his theories elicited. This includes asking explicitly about gaps, how they are defined by the individual, what has helped in the process of bridging the gap, what has hindered, what has been done, why it has been done, what the individual would like to be able to do if there were no barriers, and why. All researchers come to their work through the lenses of their own experiences, biases, theories, understandings, and hunches. The Sense-Making Approach requires the researcher to acknowledge this, and reflect upon how it may affect her research. It also requires that the researcher ensure any study using the approach is framed in such a way that participant has the opportunity to share his own experiences, biases, theories, understandings, and hunches, and that these will be considered and represented in the analyses and reporting.

In the study of PIM, we are keenly aware that the study participant is the expert on his own information space and information management practices. One way the explicit treatment of the participant as expert and theorist can contribute to and open up the study of PIM is by providing a model for eliciting from the participant what his experience of information for personal use is. As researchers we have tended to go to participants to study PIM by asking about particular nouns—generally email, files, or bookmarks. Perhaps if we instead go to participants and ask about the verbings that Sense-Making foregrounds, we will gain valuable knowledge about the more holistic information spaces that our participants create and maintain.

Finally, the Sense-Making Approach asks that the researcher ask the participant what he would like to be able to do if he could wave a magic wand—if there were no barriers impeding his bridging of the gap in question. In PIM we have most often studied what people do with information. This is reasonable because what we can observe and measure what people do. However, to only study what people do with information is to limit ourselves to thinking about PIM in terms of the tools that exist. We must keep in mind that what people do with information depends on many things, and may not be representative of what people would like to do with information.

Different types of information in different media have different affordances and constraints. Paper information has all of the limitations and advantages of its physicality [9]. The ways in which we can manage electronic information are often controlled by the designers of the systems that we use to create, store, and access that information [2]. Level of technical knowledge or lack of time to make desired changes to PIM strategies and systems,

and many other conceivable situations, may also keep participants from managing their information in what they feel would be optimal ways.

To trust that our expert theorist participants can identify and see beyond their barriers and constraints, and can imagine and explain ways they would like to be able to manage their information may allow us to leverage the creativity and expertise of many individuals in order to create new strategies and systems for doing PIM that are not “radical invention” [10].

2.6 Sense-Making is complex and evolving

The above sections have covered several of the Sense-Making Approach’s larger assumptions in a highly condensed and simplified manner. As befits a meta-theory with these assumptions, the approach has developed and changed as those working in the approach have encountered new gaps and bridged them with their own sense makings about the approach. One can only expect this development and change to continue.

The core research method that “falls out” of the assumptions of the Sense-Making meta-theory and methodology is the Micro-Moment Time-Line Interview. This interview technique can be used in PIM research, but a Sense-Making Approach need not preclude other data gathering techniques. The approach and its assumptions can be used to guide the design of various types of research—qualitative, quantitative, and in-between.

3. CURRENT WORK

I am proposing dissertation research that will use the Sense-Making Approach to study the organization of information by individuals for personal use. This work will ask such questions as:

- What gap situations lead individuals to organize their information?
- What gaps arise in the process of organizing information for personal use?

“Organization” is a bit of a misleading term to use here because often information meant for personal use often doesn’t look very “organized” in the commonly understood sense of the word. It is also important to remember that leaving something a mess can also be a strategy. The key is that people tend to do something with the things they find informative, whether it be putting them into an ordered system, or managing them in some way at some acceptable level of disorganization. This process is what I mean by “organization” in this discussion.

I see Sense-Making as a potentially valuable approach to this topic for several reasons. First, organizing information for personal use is an ongoing and highly individualized process. The Sense-Making Approach has been designed to inform systematic and generalizable research of such processes. Second, the work, and often the results, of organizing information for personal use are invisible to anyone but the individual doing the organization. Sense-Making’s attention to eliciting personal expertise and the

internal steps of such processes make it seem a natural fit. Third, framing my research using the Sense-Making Approach will allow participants to describe their processes of information organization without limiting them to discussion of a particular researcher-defined type of information. This could lead to the identification of previously hidden PIM activities. Finally, organizing information—whether it be within our heads, reams of paper, or a hard drive full of data—is an important strategy for making sense of and learning about the world. An approach focusing on the making and unmaking of sense seems especially appropriate for studying this activity.

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