Making sense of sense-making: tracing the history and development of Dervin's Sense-Making Methodology

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Abstract

In any theoretical work seeking to reconcile among different theories and foundational ideas, there is a difficulty arising out of the differences in types and nomenclatures of theories. Thus, it might be prudent to pick one major theory and trace its development. This paper seeks to understand as well as trace the development of Brenda Dervin's Sense-Making methodology over the decades. Through an examination of many of Dervin's writings, the main contribution is in helping to bring together in one paper, the major influences guiding the development of the methodology, the faulty assumptions in communication models that had to be broken, the philosophical assumptions that form a core part of the methodology, changes in the central metaphor, as well as the methods in the methodology. The study is an attempt to make sense of Sense-Making, and should be useful to those seeking an introduction to it. Future work will involve analyzing the different studies across disciplines that have used the Sense-Making methodology, as well as taking the works of other major theorists and tracing the development of their theories.

Introduction and Motivation

The difficulty with theories. In beginning to understand the development of the foundational ideas and theories of information science and its earlier name, documentation, it is often difficult to figure out where to begin. One gets mired between the notions of models, frameworks and theories (Case, 2007, pp.120-168), and between allegedly hierarchical ideas of paradigm, grand theory, middle-range theory, grounded theory and observation (Case, 2007, p.144). Brenda Dervin talks about two kinds of theories: 1) substantive theories, those that result from observation – "systematic propositional statements of the nature and characteristics of observed phenomena and the relationships between observed phenomena", privileged by those who favor quantitative approaches; and 2) metatheories, those that direct observings – "philosophically grounded assumptions about the phenomena and how to study it", privileged by those who favor qualitative approaches (Dervin, 2005, pp.25-26). Dervin brings forth the difficulties, juxtapositions and assumptions in limiting oneself to any one of these views on theories and offers a third kind of theory – theory for methodology as a bridge between the two kinds of theories. The question then arises which of the theories among these different types should one study and begin to trace the development of. Also, should one limit oneself to theories core to the field of library and information science or go to those developed in other fields but drawn upon by studies in the field. Donald Case reviews a number of models salient to the field such as those by Wilson, Krikelas, Leckie, Bystrom and Jarvelin, Savolainen and Johnson (Case, 2007, pp.123-138), as well as number of paradigms ranging from 'Zipf's principle of least effort' to 'uses and gratifications' to 'sense-making' to 'constructionism' to 'play theory and entertainment theory'. Karen Fisher, Sanda Erdelez and Lynne McKechnie (2005) have co-edited a book with different authors discussing seventy two theories in the field of information behavior. The Information Systems Ph.D. Preparation Program of the Marriott School of Management of Brigham Young University manages a growing wiki (eighty two theories as of February 2012) of theories used in Information Systems (Schneberger, Wade, Vance, Allen and Eargle, 2011), many of which find their place in research in library and information science.

Picking one theory. Thus, with the difficulty in reconciling the different types and nomenclatures of theories and choosing between different theories to arrive at foundational ideas in information science, it might be prudent to pick one major theory and trace its development over the decades. The theory chosen is Sense-

Making, which is a theory of the third kind – theory for methodology. "Whether Sense-Making constitutes a paradigm, a theory, or a methodology – or all of these – is open to question." (Case, 2007, p.158). "Some people call Sense-Making a theory, others a set of methods, others a methodology, others a body of findings" (Dervin, 1992, p.61).

Objective and significance. This paper seeks to understand as well as trace the development of Brenda Dervin's Sense-Making methodology over the decades. Through an examination of many of Dervin's writings, the main contribution is in helping to bring together in one paper, the major influences guiding the development of the methodology, the assumptions broken, the philosophical assumptions that form a core part of the methodology, changes in the central metaphor, as well as the core methods in the methodology. The study is an attempt to make sense of Sense-Making, and should be useful to those seeking an introduction to it.

The rest of the paper is organized as follows. In the next section, we will look at why Sense-Making – my motivations for picking Sense-Making, and its significance. The section following that, which forms the bulk of this paper, will look at the development of Sense-Making. This includes major influences from theorists-researchers-scholars, faulty assumptions that were broken, past theories used to explain communication failures, what Sense-Making is, philosophical assumptions in Sense-Making, development of the Methodology's central metaphor, the research methods used, and finally, the impact and application of Sense-Making to a variety of contexts in different fields. The last section concludes the paper and talks about limitations and future work. Let us now consider the choice and significance of Sense-Making.

Why Sense-Making?

Why did I pick Sense-Making? Dervin's Sense-Making Methodology is chosen as it attempts to build bridges between the two dominant approaches to theories and begins "to be theory of the third kind" (Dervin, 2005, p.26) – the theory for methodology.

Table 1 summarizes the reasons I was drawn to Sense-Making. So, how do these relate to the Sense-Making Methodology? While I have admired Dervin's work since I first read about in 2005 or 2006 in the 2002 edition of Donald Case's book (Case, 2007) (which has a

Table 1. Reasons I was drawn to Sense-Making.

I think I was drawn to Sense-Making naturally. The various influences, my approach and purpose in life have been about synthesis – in trying to reconcile apparent contradictions and differences, instead of seeing the world in the form of stereotypes and labels. While classification is natural and necessary to apply broad strokes in understanding the world, I've realized that it is a simplistic exercise and devoid of reality, something best understood as stereotyping. It has always been my endeavor to find commonalities among differences, and to respect differences among commonalities. Thus, when I see differences, I try to look for what's similar and common. When I see an attempt to paint everything with one broad stroke of color, I try to look for differences – a concept of looking for 'one' in the 'many' and to look for 'many' in the 'one'. Some of my writings in the past have reflected this. In Agarwal, Xu, and Poo, (2009), I try to reconcile the apparent differences in the 3 major schools of thought on what context in information behavior means. In Agarwal (2009), I propose a theory of Expanding Circles of Identity and how Identity can be used to unite rather than to divide. In a blog post (Agarwal, 2009b), I try to reconcile the differences in the names used for God by adherents of different sects and religions. In an ongoing work, I am trying to reconcile the contradictions in the various commentaries on the Bhagavad Gita (see Agarwal, 2012). The theme is also tied to the various talks on happiness and my 7 commandments in life that I've given to different audiences (see a recent video of a talk on how to be different similar – Agarwal, 2012b). A close parallel to this thinking is in the fundamental principle of hermeneutics (see Klein and Myers, 1999), which suggests that "all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form." (p.72)

This discussion of my motivations is in line with what Dervin (1991/2003e) says, "Scholarly writing, as well as journalism, pretends to rip the person out of the text. While this is never wholly possible, the canons of scholarly writing explicitly mandate against personal motivational statements. Envision retrieval statements which acknowledge that the constructor is an important part of the construction and requires that author(s) present personal statements explaining such aspects of their situation as: their own intellectual history, or how the piece of scholarship helped them handle a contest or barrier; or what the project permitted them to do." (p.306)

new, 2012 edition), and used sense-making as an important theoretical basis in my Ph.D. dissertation, it has only now begun to really connect. As I listened to Dervin speak (see her video at Dervin, 2011), I realized that her motivations and mine are similar.

Sense-Making is all about trying to reconcile apparent differences and polarities without wishing away the differences, but recognizing them as important. As Dervin and Huesca (2001/2003) write, a "dialogic or communication theory of communication focuses not on homogenizing difference but on putting difference into dialogue and thus, using it to assist human sense-making. Such a communication theory of communication assumes that when difference is not treated dialogically, it appears both capricious and chaotic as if needing homogenization." (p.310) Dervin (2011) says that "we need to find a way to help people be tolerant of the fact that other people see the world differently and that not all differences between human beings need to be resolved (unless we're going to call human life war). [This is] because we can't make human beings change, except they can change [if they want to]." Dervin writes in the preface of her book (Dervin, Foreman-Wernet with Lauterbach, 2003), "The communication field I entered was one bifurcated as it essentially remains today between polarized approaches – quantitative versus qualitative, administrative versus critical, and theory-driven versus applied and practical. I was not comfortable with the implications for understanding audiences and these bifurcations. I felt it must be possible to do audience studies capitalizing both on the systematizations that typify quantitative studies and the interpretive and critical sensibilities that typify qualitative studies. And I felt it must be possible to conduct theoretical research in such a way that it directly informed communication practice." (p. vii). In navigating between polarities, Dervin terms her quest as her "schizophrenic search for the 'in-between'" (p. x) or "philosophically anchored methodological consideration" (Dervin, 2005, p.26).

The Significance of Sense-Making. Brenda Dervin terms Sense-Making as a "methodology between the cracks", "which seeks to address weaknesses in conceptualization and study of users and at the same time provide a systematic approach that can be used both qualitatively and quantitatively in developing critical practice for the design of responsive systems." (Dervin, 2012).

Sense-Making is based on three central assumptions regarding communication practice (Dervin, 2012b):

- That it is possible to design and implement communication systems and practices that are responsive to human needs;
- That it is possible for humans to enlarge their communication repertoires to pursue this vision and to discipline their communicatings to achieve these possibilities;
- That achieving these outcomes requires the development of communication-based methodological approaches.

Foreman-Wernet (2003) cites what he sees as three major reasons for the significance of the Sense-Making Methodology (pp. 4-5):

- Sense-Making offers a thorough critique of and an alternative to the widely-prevalent transmission model of communication
- Sense-Making examines in an ongoing manner philosophical assumptions about the nature of reality, the nature of human beings and the nature of observing upon which communication theories and practices are built.
- Sense-Making pays explicit attention to the "hows" of communicating that occur at every level of society that helps us not only to understand how we communicate but to intervene, change and improve these practices.

"Sense-Making is proposed as a generalizable approach to thinking about and studying human sense making and sense unmaking in its variant forms." (Dervin, 2005, p.26). It's focused primarily on information seeking and use but has also been applied to other fields. (Dervin, 2005).

The Development of Sense-Making

Brenda Dervin started off as a journalist (Dervin, 2011). She received a B.S. degree in journalism and home economics from Cornell University, with a minor in philosophy of religion, and her M.A. and Ph.D. degrees in communication research from Michigan State University. Along with her Sense-Making Methodology, cats and birds, and interest in reading, writing, poetry,

art and music, among others, she is passionate about feisty creatures - "humans who commit their lives to justice and the improvement of the human condition". She likes "being an old lady, temperamental, and persnickety" (OSU, 2010). She says, "On Mondays, Wednesdays, and Fridays, I consider myself a postmodern modernist. On Tuesdays, Thursdays, and Sundays, a modern postmodernist. On Saturdays, I rest." (OSU, 2010)

The development of Sense-Making began in skeleton form in 1972 and was first articulated as Sense-Making in 1983 (Dervin, 2005). A comprehensive review can be found in the Sense-Making Methodology Reader, which is a collection of selected writings by Dervin (Dervin, Foreman-Wernet with Lauterbach, 2003). Also see the Sense-Making Methodology website (Dervin, 2012c).

Major influences

Sense-Making draws primarily on the intersections of the writings of American and European theorists in the fields of philosophy, sociology, psychology, education, cultural studies, communication, and feminist, cultural and postmodern studies (Dervin, 2005). These included the constructivist learning theories of John Dewey and Jerome Bruner, as well as other scholars such as Richard Carter, Clifford Geertz, Anthony Giddens, Jurgen Habermas, and Robert Taylor, among others (Case, 2007, p.158).

Table 2 below summarizes the major influences from the work of a specific group of theorists/researchers/scholars that informed and influenced the development of Dervin's Sense-Making Methodology (adapted from Dervin's acknowledgements in her book, Dervin, Foreman-Wernet with Lauterbach, 2003, pp.ix-x).

Table 2. Theorists-researchers-scholars whose work significantly informed Sense-Making (adapted from Dervin, Foreman-Wernet with Lauterbach, 2003, pp.ix-x).

Area **Theorist / Researcher / Scholar**	**Work that informed and influenced Sense-Making /** **Additional references**
Communication research	
Richard F. Carter, Professor Emiritus of Communication, University of Washington	Efforts to develop a theory for communication methodology and a methodology for communication theory; Dervin's dedicates her book (Dervin, Foreman-Wernet with Lauterbach, 2003) to him and gives foremost credit. Carter's discontinuity assumption is a fundamental tenet of Sense-Making. Also see Dervin, Chaffee, with Foreman-Wernet (2003); Dervin (1975/2002)
U.S. based quantitatively-oriented social sciences	
Jerome Seymour Bruner (born 1915), currently Senior Research Fellow at the New York University School of Law.	Early work on information processing; His move to focus on meaning and positioning himself between polarities served as a model. Also see bruner.socialpsychology.org; www.psych.nyu.edu/bruner/; Wikipedia (Jerome Bruner)
William James McGuire (1925-2007)	Persistence in developing a contextualized approach to social psychological analytics. Also see Jost and Banaji (2008)
American pragmatism	
John Dewey (1859-1952)	Conceptualizations of community as made in communication. Also see Wikipedia (John Dewey)
Richard McKay Rorty (1931-2007)	Interpreting pragmatism in the current postmodern frame. Also see Wikipedia (Richard Rorty); plato.stanford.edu/entries/rorty/
European critical-cultural traditions	
Paul Bourdieu (1930-2002)	Critical focus on practice as habitus informed Dervin's attention to social structure manifested in practice. Also see Wikipedia (Pierre Bourdieu)
Michael Foucault (1926-1984)	Informed necessity of including power as a central concept. Also see Wikipedia (Michael Foucault); plato.stanford.edu/entries/foucault/; www.michel-foucault.com

Anthony Giddens (born 1938), Emeritus Professor, London School of Economics	Attention to structure and agency informed attentions to human struggles to sometimes fall in line, and sometimes fall out of line. Also see Wikipedia (Anthony Giddens, Baron Giddens); www2.lse.ac.uk/sociology/whos who/academic/Giddens.aspx
Jürgen Habermas (born 1929)	Development of communication-based theories of social structure provided 'both foil and fodder'. Also see Wikipedia (Jürgen Habermas); plato.stanford.edu/ entries/habermas/
Hans-Georg Gadamer (1900-2002)	Treatment of philosophical hermeneutics in its relationship to method. Also see Wikipedia (Hans-Georg Gadamer); plato.stanford. edu/entries/gadamer/
Third world emphasis on critical liberatory praxis	
Paulo Reglus Neves Freire (1921-1997)	Critical pedagogy and the concept of conscientizing informs the foundational premises of interviewing approaches. Also see Wikipedia (Paulo Freire); www.paulofreire.ce.ufpb.br/paulofreire/
Luis Ramiro Beltrán Salmon (born 1930)	Lifelong project to improve life conditions of the less privileged informed what Dervin's work is all about; Dervin refers to him as her 'special friend'. Also see knight.miami.edu/index.php/site/bios/luis_ramiro_beltran_salmon_phd

Apart from these, Dervin also acknowledges members of different fields and discourse communities, research funding agencies, scholars who have used Sense-Making in their research, her students and colleagues as people who have helped in the development of the Sense-Making Methodology over the years (Dervin, Foreman-Wernet with Lauterbach, 2003, pp. x-xi).

Faulty assumptions that were broken in the Development of Sense-Making

Dervin's Sense-Making Methodology came about as she tried to follow but quickly perceived limitations in the still widely prevalent way of understanding communication as transmission of messages from the source to the receiver. Dervin (2011) talks about how our information systems are built on the stereotypes of human beings and that we have not found a good way to place the user at the heart of the system. Discussed below are the assumptions that Dervin encountered and broke as she developed her Sense-Making Methodology. Much of the discussion below is from one of Dervin's talks (Dervin, 2011).

Faulty assumption – Information is a brick that can be transmitted from the source to the receiver. The culprit, Dervin says, is the information brick, a legacy from modernity, that we were going to have accurate information and that it was going to allow us, if we could only frame our messages properly, to communicate well with other human beings (Dervin, 2011, 09:12). Anthony Giddens describes modernity as "a shorthand term for modern society, or industrial civilization...It is a society,..a complex of institutions..which, unlike any preceding culture, lives in the future, rather than the past." (Giddens, 1998, p.94). It is the 17th century vision of a society "as rationally ordered as the Newtonian view of nature." (Toulmin 1992). Dervin (2011) talks about Stephen Toulmin's (1992) book where he criticizes the hidden yet persistent agenda perpetuated by modernity: the delusion that human nature and society could be fitted into precise and manageable rational categories. Sense-Making proposes that information is not 'something that exists apart from human behavioral activity.' Rather, it is 'created at a specific moment in time-space by one or more humans' (Dervin, 1992, p.63). Unlike other approaches to information seeking that see information as something 'out there' that is transmitted to people (as Dervin says, an information 'brick' that is put into a human 'bucket'), sense-making sees information as construed internally in order to address gaps or discontinuities (Case, 2007, p.158).

Faulty assumption – Systems seeing people as if they have the 'information habit'. People are walking along on their own life paths, with their set of thoughts, notions, prejudices, difficulties, etc. until they encounter a 'system' (which could either be a computer-based system or an organization, institution, etc.). Most of our systems are designed with the assumption as if people have the 'information habit' to be the recipient for the brick and understand the information perfectly – that they come ready to receive and via a hypodermic needle, we, the

source or the system, are going to transmit the information we have to them (Dervin, 2011), we throw the brick at them and they catch it. Dervin (2011) gives the example of our visit to a computer store, where the computer expert stands with a bunch of words that we do not understand, and assumes that we understand every one of them and how all the pieces fit together. "[We] try to ask a question and [we]'re treated like an idiot". (13:24). "Receivers who don't get the message are perceived to be somehow deficient or disinterested or recalcitrant." (Foreman-Wernet, 2003, p.5).

Faulty assumption – People are buckets into which the information bricks can be tossed. The transmission model of communication assumes that the person or the system (institution, organization, government, library, etc.) that have the brick in his/her head (information) can throw it to those who don't have it in their head and they are expected to catch it. As a system, when we communicate about our services, we expect empty recipient bucket heads waiting to be filled (Dervin, 2011). We have lots of stuff – different types of information bricks (books, articles, orders, reports, media, facts, memo, etc.) that we want to get into people's heads, which brings about information overload and a big burden for them. (Dervin, 2011, 14:09). We than put and organize all these different types of information bricks in a cave (libraries, databases, knowledge repositories, etc.) and train people to have expertise in getting these bricks out of our caves (Dervin, 2011, 14:14), as library and information science schools do.

Faulty assumption – Audiences/users are just like us and understand our jargon, vocabulary and the words we use. Another assumption that Dervin observes is that we expect our audience to understand expert information – whether it be related to phrases such as "information science" or "informatics" or "social work", etc. Such vocabulary related to the Sense-Making Methodology might be, "sense making", "verbing", etc. (Dervin, 2011, 18:06). On the other hand, what the audiences/users often get is just a collision of words which are difficult for them to comprehend and make sense of (Dervin, 2011, 19:03).

Faulty assumption – Systems can predict a static information need in advance. Our systems (whether computer-based information systems, search engines, or otherwise) are designed to wait for a well-articulated question (search queries, keywords, etc.) and are obsessed with trying to predict a static information need well in advance (Dervin, 2011, 20:17) E.g. trying to determine the information need by profession – e.g. those of doctors, lawyers, students, farmers, etc. However, an average person doesn't often behave as the system expects it to.

Figure 1. Dervin's squiggly person (Dervin, 2011, 20:31).

Dervin's average person is purposefully squiggly (see Figure 1), who she calls, Mr. Squiggly (and, to avoid any bias, says that it could be called Miss Squiggly as well). Squiggly here implies that "this person is both ordered and disordered" (Dervin, 2011). By seeing Mr. Squiggly as being both, Dervin takes a stand in between the polarities of the modern and postmodern views, that "presume humans to be either rational and orderly or muddled and decentered, respectively." (Foreman-Wernet, p.6) Mr. Squiggly comes forward to the orderly system and doesn't behave as expected (Dervin, 2011). His need might not be all that straight forward to predict.

Past theories used to explain communication failures

So, given that the model of communication discussed above (and widely prevalent in theory and practice) clearly doesn't work, Dervin (2011) talks about two theories that try to explain why our efforts to communicate to users fail: 1) The first theory is that we, the recipients of these messages, are leaky buckets, who can't keep information in our heads – a theory used by teachers, doctors, journalists, etc. (Dervin, 2011, 25:23); 2) The second theory, which Dervin calls her favorite, is about the user being the recalcitrant bucket, who just refuses to receive the information that s/he receives at a given point in time and space (Dervin, 2011, 25:42). Dervin (2011) says that given that we've failed, we've intro-

duced multiple ways of dividing users into boxes based on demography, capabilities, person traits, cognitive/emotive styles, lifestyles, domain, task, channel, institutional context, etc.

As per Dervin (2011), our systems have journeyed through six theories of communicating: 1) direct transmission; 2) artful design for direct transmission; 3) artful design for demographic groups; 4) artful design for personality groups; 5) artful design for lifestyle and cultural groups; and 6) spontaneous participation. There is a seventh, missing theory.

So, What is Sense-Making?

The missing theory, Dervin (2011) says, is one of systematic reliable dialogue, where we see communication as a dialogue, as quid-pro-quo. This requires "open-endedness, or reciprocity, in an institution's approach to its receivers" and where institutions "learn to listen and to address differences and contests in human beings' understandings and experiences." (Foreman-Wernet, p.6).

Dervin suggests that an alternative communication model "conceptualizes messages not as things to be gotten, but as constructions that are tied to the specific times, places and perspectives of their creators" (Foreman-Wernet, p.5) or the system. "Such messages are understood to be of value to receivers only to the extent that they can be understood within the context of receivers' lives" (Foreman-Wernet, p.5) e.g. that of Mr. Squiggly who is both ordered and unordered – "that there are differences in human beings' understandings and experiences" (p.5). Thus, information is to be seen, not in itself, but as understood by an average person such as Mr. Squiggly. Dervin's model also "acknowledges that social power structures, such as systems of expertise, decide whose understandings and observations get preference." (Foreman-Wernet, p.5).

Sense-Making Methodology seeks to take into consideration when conducting research as well as practice "the inherently internal nature of observing and sense-making and, at the same time, the inherent connections and tensions between these internal acts and the historical, cultural, political and economic contexts from which they arise. [acts of human communication] are ultimately intra-personal acts, acts of individuals creating messages and other individuals making sense of those messages. At the same time, the nature of these acts are acculturated, constrained, and/or facilitated by the contexts and the time-spaces in which they occur. There is chaos/change as well as order/stability and movement in between as humans move across time-space in the complex interconnections between individual and structure. Both chaos/change and order/stability are inherent to human making of sense." (Dervin and Huesca, p.313, when recommending a change in journalistic practice).

Figure 2 below summarizes the methodology (Dervin, Foreman-Wernet with Lauterbach, 2003).

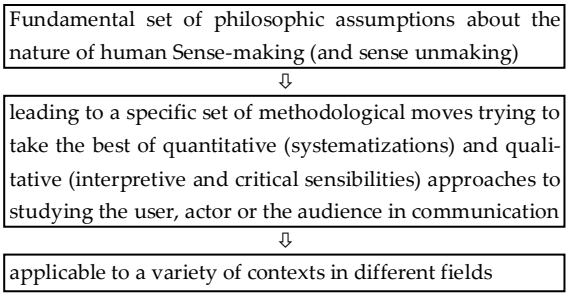

Figure 2. What is Sense-Making?

Dervin says that whichever model of communication we choose, we "need to make clear the philosophical assumptions on which our chosen model rests" – "the philosophical foundations (metatheory) of our research that provide ways of looking based on presumptions about reality (ontology), knowledge (epistemology) and power (ideology)." (Foreman-Wernet, 2003, p.7).

Philosophical Assumptions (Metatheoretical tenets) in Sense-Making

Dervin (1999/2003) writes that "from the beginning, Sense-Making has been concerned primarily with theorizing of the metatheoretical sort." (p.138). Sense-Making's "mandate has been focused primarily on the development of philosophical guidance for method, including methods of substantive theorizing and of conducting research." (Dervin, 1999/2003, p.138).

Dervin's work has been about trying to find a middle ground and straddling between extreme polarities of the modern and post-modern views (Foreman-Wernet, 2003; see Figure 3).

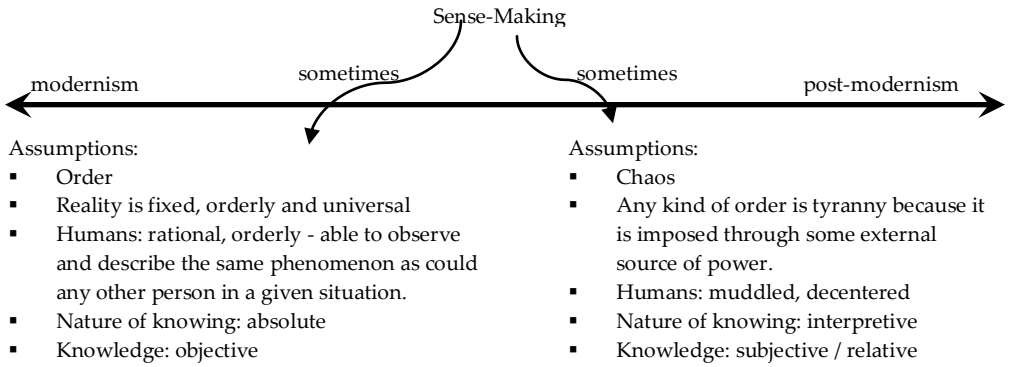

Figure 3. Sense-Making straddling polarities (summarized from Foreman-Wernet, 2003, pp.6-7).

The assumptions of Sense-Making are (Foreman-Wernet, pp.7-8):

Humans

- That humans (think of Mr. Squiggly) are sometimes orderly and sometimes chaotic
- That there is a human need to create meaning
- That there are human differences in experience and observation.
- That instead of reducing difference to cacophony, we can handle difference by putting it into dialogue. "People are helped by others who see the situation as they do, but also by those who see the situation differently." (Foreman-Wernet, p.7)
- That though anchored in material conditions, it is impossible to separate the inner and outer worlds of human existence. The human-being (Mr. Squiggly) is presented in phenomenological terms, as a "body-mind-heart-spirit moving through time and space, with a past history, present reality and future dreams or ambitions." (Foreman-Wernet, p.7)
- Humans always are potentially changing, or becoming, "sometimes decentered, sometimes centered, sometimes fluid, sometimes rigid" (Dervin, 1999/2003, p.141). Thus, the quest of our systems to try to know a static information need of a person or user is futile.
- Humans are neither totally free (helped by forces that assist movement in time-space e.g. freedom and creativity) nor are their actions totally prescribed (due to power that constrains or hinders creativity and freedom e.g. structure and habit). Thus, humans are "both affected by structural power and are themselves sites of power" (Foreman-Wernet, p.8).
- That no human movement, either individual or collective, can be fully instructed or determined a priori. Even if the next step or movement is in conformity, it is a step made anew by the individual. (Foreman-Wernet, p.8)
- That even though culture and community are important, and even if we understand all rules of a culture, we can still fail in communicating "because no person is the average of his/her culture". "We fight as human beings to fall in line. We fight as human beings to fall out of line." (Dervin, 2011, 28:21 – 28:29).
- That we need to understand the box categories (stereotyping) the world divides us into – race, religion, ethnicity, etc. but they don't help predict communicative behavior; that is always more variance within the box, then between one box and another (Dervin, 2011).

Knowledge and Information

- That knowledge is uncertain and something that always is sought in mediation and contest
- That information, as a static, absolute term (information-as-thing), is a disappearing category and that it should be qualified with a phrase like 'information as defined by the expert.' (information-as-construction) (Dervin, 1999/2003, p.149). See Dervin (1999/2003, pp.148-159) for other assumptions on information.

Reality

- That reality is sometimes orderly and sometimes chaotic

- Richard Carter's discontinuity assumption (Foreman-Wernet, p.8): That reality always is subject to multiple interpretations because of:
    - Changes across time and space
    - Differences in how humans see reality arising from different perspectives or positions in time/space
    - How humans construct 'bridges' over a 'gap'-filled reality. "This pervasive gappiness or discontinuity can be evidenced in the difference between observations of the same person at different times, between different persons at the same time, and different persons at different times." (Foreman-Wernet, p.8). See Figure 4.

Procedures (Dervin and Frenette (2001/2003, p.237)

- That categorizations by experts can be entirely wrong, irrelevant, or inappropriate impositions when applied in the contexts of other lived experiences.
- That the only way to hear another's world is to invite and assist the other in describing that world as much as possible entirely in the context of his/her own experiences, understandings, and meanings.
- Because of the power differentials inherent in the institution-audience or researcher-researched relationship, procedures must be found to bracket/tame the power of the institution or researcher.

"Although the specific human responses may be too numerous to account for in any systematic way, Sense-Making Methodology suggests that research can usefully look for patterns in the human condition that relate to how we make sense rather than merely at the content of our responses." (Foreman-Wernet, p.8)

See, Dervin (1999/2003), Dervin (1984/2003c) and Dervin and Frenette (2001/2003, pp.239-240) for detailed discussions of Dervin's metatheoretical assumptions.

Development of Sense-Making Methodology's Central Metaphor

Figure 4 shows the central metaphor of the Sense-Making methodology that seeks to serve as a highly generalizable 'microscope' guiding the observation of communicating (Dervin, 2005).

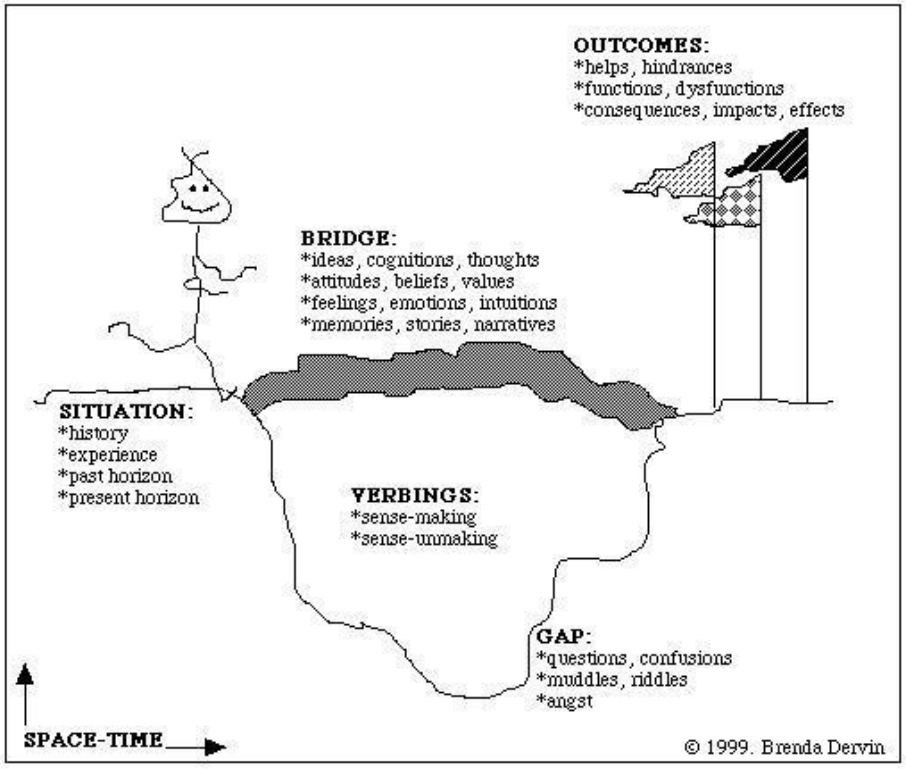

Figure 4. Central metaphor of the Sense-Making methodology.

"Sense-Making mandates that communicating be conceptualized as gap bridging ...as a mandate of the human condition. Each new moment in time-space requires another gap-bridging step regardless of whether that step is manifested as habitual and unconscious; capricious and accidental; or invented and planned. Gap-bridging is posited as potentially changeable across time-space but in given time-space moments, anchored in particular situational conditions with particular structural arrangements, experiential horizons, and flows of power/energy. As a person moves from time-space moment to time-space moment, gap-bridging is seen as both potentially responsive and potentially impervious to changing conditions." (Dervin, 2005, p.27)

Figure 4 shows the 1999 version of Sense-Making's central metaphor. In later versions (e.g. Dervin, 2005, p.28), Dervin also adds 'context' (power structures and dynamics, domain knowledge systems, cultures and communities) to it. She elaborates 'outcomes' to include 'future horizons'. 'Situation' is expanded to include 'identities' and 'barriers and constraints'. Interestingly, recognizing the possibility of plurality in a situation, 'history' is changed to 'histories' and 'experience' to 'experiences'.

An earlier version of the central metaphor (see Dervin, 1989/2003b) is much simpler with the only components as 1) situation 2) gap faced (block faced, barrier faced) 3) gap bridged (questions answered, ideas formed, resources obtained) and 4) uses (helps). The elaboration of these in the metaphor diagram, and the inclusion of 'verbings' and 'context' appear to be later additions.

The assumptions discussed so far, "guide methodology, or the theoretical analysis of methods, which prescribe our choice of actual methods or procedures in the sense of research techniques" (Foreman-Wernet, 2003).

Methodological Moves in Sense-Making

"Sense-Making is accurately understood to be both a body of theoretical assumptions that support a particular understanding of human communication and also a specific set of methods that guide the design and implementation of communication research and practice." (Foreman-Wernet, 2003, p.14). While "its methods for data collection are qualitative in nature, the results can be analyzed in quantitative as well as qualitative ways." (Foreman-Wernet, 2003, p.14) All studies are based on the central metaphor of the Sense-Making Methodology. (Foreman-Wernet, 2003)

Sense-Making Methodology, from the beginning, has been about designing a "methodology for the communicative study of communication." (Dervin, 1999/2003). Sense-Making recognizes that when it comes to communication, "quid-pro-quo is everything" – that "if I listen to you, you will listen to me." (Dervin, 2011). More than mere listening, "it is a way of asking questions of human beings which allows them the free play to describe their worlds as they see it and establishes the trust relationship." (Dervin, 2011)

Research Questions. Sense-Making "mandates the framing of research questions such that the respondent is free to name his or her own world. Great care is taken to allow the respondent rather than the researcher to describe and define the phenomenon in question" (Foreman-Wernet, 2003, p.8). To ask the respondent about his/her world in his/her own terms, Sense-Making brackets (or tames) all the nouns, and puts on a set of verbing questions, as alternatives. (Dervin, 2011) The idea is to "stop talking to people in the nouns of our world, and allow people to put the nouns of their worlds on our plates, so that we can understand their material conditions. If we keep imposing our nouns, we'll never hear. We'll never find out." (Dervin, 2011). In looking at the verbing as a primary ontological category, Dervin assumes that "structures are energized by structuring; organizations by organizing; human beings by sense-makings and sense-unmakings." (Dervin, 1999/2003, p.141) "It is by focusing attention on practices rather than persons that Sense-Making's mandated attentions to time, space, movement, gap are systematically addressed" (p.141).

Data Collection – Interviewing practice. "Sense-Making has been applied in both qualitative and quantitative interviews, in-depth and brief, phone and in-person, one-on-one and focus group, interviewer-administered and self-administered." (Dervin and Frenette (2001/2003, p.241). The Sense-Making interview "is designed such that the respondent is able to circle, or repeatedly engage with, the given phenomenon or situation. Drawing from psychoanalytic theory, it is presumed that redundancy is useful for allowing both the

embodied and the unconscious to be articulated." (Foreman-Wernet, 2003, p.8).

The foundational interviewing approach used in Sense-Making is the Micro-Moment Time-Line (Dervin and Frenette, 2001/2003). Informants "are asked to describe a situation relevant to the research focus" (important to them in some way). "The situation is described in Time-Line steps – what happened first, second, and so on. For each step, Sense-Making elements are extracted: What questions arose at this step? What thoughts? What feelings? What emotions? Each of these elements is then triangulated with the Sense-Making metaphor" (situation, gap, bridge and outcome). "For example, in triangulating a question, the informant is asked the following: What led to this question? How does it relate to your life? Society and power? Did you get an answer? How? Any barriers in the way? Did the answer help? Hinder? How?" (Dervin and Frenette, 2001/2003, p.241).

Many variations to this approach have been developed (Dervin and Frenette, 2001/2003) – e.g. the Abbreviated Time-Line Interview, the Helps Chaining Interview, Message Q/uing, etc. (Dervin, 1992/2003d). See Dervin (1984/2003c, pp.258-259) for a detailed example of the Micro-Moment Time-Line interview. Also see the examples in Dervin (1992/2003d).

Data Analysis. During data analysis, there is a search for patterns in terms of processes or verbs rather than things or nouns (Foreman-Wernet, 2003, p.8). "The researcher is directed to look, for example, at how informant sense-making varies across time and space; for both stabilities and habits as well as flexibilities and changes; for connections between past, present, and future; and at how the informant sees self as constrained and struggling as well as moving and free." (Dervin and Frenette, 2001/2003, p.241). By looking at communication as a dynamic process – the "verbing" perspective (see Figure 4), "we can look at other, often more powerful, predictors than demographics, psychological traits, and similar categorizations that remain fixed across time and space." (Foreman-Wernet, 2003, p.9). See Dervin and Frenette (2001/2003, pp.242-244) for examples of verbing categories that have been developed that allow researchers to interpret data without imposing institutional judgment on it. See Dervin (1984/2003c) for measures that have been developed for situations, gaps and uses.

Impact of Sense-Making: Application to a variety of contexts in different fields

In an introductory essay to three issues of the Electronic Journal of Communication focusing on the Sense-Making Methodology, Dervin and Clark (1999) write that the 18 exemplar studies in those issues were from different disciplines, used different research approaches, utilized different research methods ranging from "in-depth interviews, phone surveys, participant observation, content analysis, text analysis, statistical analysis, and thematic analysis, among others". The common thread for all the studies was "the use of the Sense-Making Methodology as a source of methodological guidance for virtually every aspect of research step-taking—conceptualizing and framing questions, observing, interviewing, listening, and analyzing" (Dervin and Clark, 1999).

As per the narrative summarizing Dervin's curriculum vitae (Dervin, 2012), "Dervin is one of the most highly cited scholars in the fields of communication and library/information science. The ISI index showed her works as cited more than 2,400 times in journal articles between 1970 and 2012. Her current [as on January 2012] Google scholar citation count is 2570; her general Google reference count is 43,000. For scholars in the communication field as a whole, she is estimated to be in the top .001%." "Most of the citations to Dervin's work focus on Dervin's interrogations of the methodologies used in studying users/ audiences/ patrons of a wide variety of communication/ information systems -- e.g., telecommunications services, libraries, media systems, educational institutions, health care delivery, and arts institutions" (Dervin, 2012). Researchers who use Sense-Making as a theoretical base "publish primarily in the communication fields and/or library/information science fields although uses have come as well from a wide variety of other fields including, as examples: nursing, medicine, counseling, religious and spirituality studies, telecommunication policy, museum studies, journalism, web design, ethics, public education campaigns, audience reception, environmental education, technology studies, consumer and family relations, so-

cial work, cultural studies, psychology, political science, philosophy, sociology, architecture." (Dervin, 2012)

Conclusions, Limitations and Future Work

In the beginning of the paper, we had talked about different types of theories. Sense-Making assumes that theories of the third kind (theory for methodology) are required for reflexively addressing how theories of the first kind (substantive theories) are enabled and constrained by theories of the second kind (philosophical assumptions) and vice versa (Dervin, 2005, p.29).

This study has attempted to trace the development of the Sense-Making Methodology over the decades. Through an examination of many of Dervin's writings, the main contribution is in helping to bring together in one paper, the major influences guiding the development of the methodology, the faulty assumptions in communication models that were broken, the philosophical assumptions of the methodology, changes in the central metaphor, methods and application to different contexts.

The study is an attempt to make sense of Sense-Making, and should be useful to those seeking an introduction to it.

Limitations. As Dervin (2012b) writes, since "Sense-Making has been under development since 1972, it cannot be encapsulated in a few sentences or even the intersection of all the documents on [the Sense-Making Methodology] web site". This paper should thus be seen as only scratching the surface of Sense-Making and helping a reader get an introduction to the development of Sense-Making in a single document. For an in-depth study of Sense-Making, the reader should consult the many articles in Dervin, Foreman-Wernet with Lauterbach (2003) and the Sense-Making Methodology website (Dervin, 2012c).

Future work. Future work will involve studying Sense-Making not just through Dervin's writings but analyzing the different studies across disciplines that have used the Sense-Making methodology. Future work will also involve taking the works of other major theorists and tracing their development. I invite other scholars and theorists to replicate the approach and format used in this study in carrying forward this work of synthesizing and sense-making of other theories.

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