

MAKING SENSE OF SENSE-MAKING: From metatheory to substantive theory in the context of paranormal information seeking

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What is the sense of sense-making theory?

Dervin's sense-making theory has produced numerous empirical studies and practical applications. These have been generated in a wide variety of contexts and sometimes from competing and seemingly incommensurate paradigm stances. This paper looks at sense-making from the perspective of information studies, or, to put it more precisely, from the perspective of information seeking studies.

Sense-making theory has suffered from a lack of development. I claim that the reason for this state of affairs lies in two facts: 1) the theory has never been explicitly and systematically expounded and brought down to the empirical level step by step, and 2) there has been little discussion on the impact of empirical results on the theory, i.e. an explicit discussion of the assumed circular improvement of theorizing by data. The fuzziness of sense-making theory has apparently been such that it has even caused misunderstandings and misusages of the theory in some studies. Hence it might be appropriate to ask: what is the sense of the theory in question?

No single, unambiguous answer can be given to the question, for sense-making theory has several meanings depending on the disciplinary or paradigmatic position of the speaker. This paper is an attempt at making some sense of sense-making theory at its various levels of abstraction, again doing so in the context of information studies. This will not be done as an end in itself, but rather with the purpose of discussing the strengths, weaknesses, and general fruitfulness of the theory in mind. However, due to the limited space of this paper, it is not feasible to treat the shortcomings of sense-making theory in detail. The level-by-level analysis of sense-making theory will be facilitated by exemplary models, and illustrated by an application of the theory in the specific context of paranormal information seeking. An implicit purpose of the paper is to deliberate on how sense-making theory could be used as an instrument for empirical research.

Of the various levels of theoretical abstraction, three are relevant here: metatheory, formal theory and substantive theory. The works of Robert Grover and Jack Glazier (1986), Pertti Vakkari and Martti Kuokkanen (1997), as well as David Wagner and Joseph Berger (1985) provide examples of the frame of reference brought to bear herein. Sense-making theory has traditionally been at its strongest at the *metatheoretical level* at which it consists of the most general assumptions about the reality to be studied as well as of the core concepts. If one applies the standards proposed by Grover and Glazier, one can conclude that the *formal level* is all but missing in information seeking research based on sense-making. A formal sense-making theory will, therefore, have to be derived from its metatheoretical counterpart. To date, *substantive* sense-making theories have been little more than obscure lists of loosely-interrelated operational concepts and their categories. This paper will

demonstrate that a coherent and systematic sense-making substantive theory can be readily constructed on the basis of a formal theory.

The gradual construction of a sense-making substantive theory will be concretized by explaining how I myself proceeded with the task in my licentiate's thesis. The purpose of that study is to examine information needs, seeking and use in the context of paranormal information (information about the paranormal or information supposedly acquired by paranormal means) in a particular situation, as experienced by people who are interested in the supernatural.

About theories

Theory is "an idea or set of ideas that is intended to explain something" (Collins 1987, 1515). The nucleus of any theory is constituted by a set of concepts and their interrelationships. Theories may have a variable number of levels of abstraction of which three are probably the most common ones: metatheory (across disciplines), formal theory (within a discipline) and substantive theory (within a research setting). There can be other levels that are even more general or specific (see Grover & Glazier 1986), but these are not discussed here. Metatheories are most abstract and least changeable, whereas substantive theories are least abstract and most changeable. Theories operate at different levels, and serve different purposes.

Why use theories at all? What is so important about them? Theories are never an end in themselves. Their primary function is to give a definite form and order to an area of inquiry, and thus facilitate empirical data collection and analysis. Basically, it is just as simple as that. In the long term, a body of orderly data and results leads into faster growth of knowledge than a less systematical one.

Sense-making as a metatheory

Any study should start off with one big question which we aim at answering through data gathering and analysis. This question, of course, represents the research problem. The question can be something suggested in literature or by other people, or arise from our own interests. In my study, the big question is: what is information seeking in the context of the paranormal like? In focusing the research problem, a metatheory can be of great assistance as it provides useful concepts and a point of view to our study.

According to Wagner and Berger, *metatheory*¹ is a set of general ontological, epistemological and conceptual suppositions about a certain portion of reality. Metatheories do not deal with phenomena or processes in the real world, but rather with how these phenomena and processes should be conceptualized. The cognitive function of metatheories is to guide researchers in constructing theories proper. (Wagner & Berger 1985, 700; see also Vakkari & Kuokkanen 1997².) Thus a metatheory could be called the "spirit" of a theory. Interestingly enough, Wagner and Berger mention that metatheoretical assumptions are often presented in a metaphorical form (Wagner & Berger 1985, 700), which has much to do with the problems of sense-making theory. They also point out that being rigid and stable, metatheories hardly grow at all (*ibid.*, 701).

As far as single studies are concerned, it must be noted that metatheories are not as absolute as they might seem. If necessary, we may be able to discard, change or add

¹ Grover and Glazier (1986, 234) refer to the same concept with the term *grand theory* which they define as "a set of propositions that furnish an explanation of relationships applicable to any area of inquiry (profession or discipline)".

² Vakkari and Kuokkanen have made a major contribution to information studies by bringing Wagner's and Berger's ideas on the levels and interrelationships of theories to our attention.

elements to suit the purposes of our study. Even if we decide to take a particular theory as the metatheory for a study, the metatheoretical basis needs not consist of one theory only. I can see no reason why the metatheory of a study could not comprise of a blend of two or more theories. Careful consideration is required in selecting metatheoretical elements, however, because metatheory influences the whole research process. For the sake of clarity, I will only discuss one theory — sense-making theory — in its basic form, and then transform it somewhat to make it reflect reality (as I see it) more closely.

Here is the map ...

To the term “sense-making” has been attached many meanings. It has been used to refer to a set of assumptions and assertions, to a theory, to a set of methods, to a methodology, and to a body of research results. In the broadest sense of the word, sense-making is all of this. More than anything else, however, sense-making is “a set of metatheoretic assumptions and propositions about the nature of information, the nature of human use of information, and the nature of human communication”. (Dervin 1992, 61–62.) The approach can be used to study any situation which involves communication (ibid., 68). These denominations do not, however, really allow us to grasp the meaning of sense-making. Strangely enough, the most central concept lacks a proper definition in sense-making literature. A dictionary offers a sensible explanation: “When you make sense of something, you succeed in understanding it” (Collins 1987, 1316). Thus *sense-making* simply means getting an understanding of or attributing meanings to something.

At the general level, it can be seen that sense-making theory exhibits many characteristics of a metatheory. First of all, the theory contains several basic assumptions about (human) reality that are taken for granted. The most central ones are: the individual is constantly moving in time-space (Dervin 1983, 7); human reality is discontinuous (see Dervin 1983, 4, 7; Dervin 1992, 62; Savolainen 1993b, 17; cf. Savolainen 1993b, 16); the individual has to make sense of reality to be able to bridge gaps caused by discontinuity (see Dervin 1983, 3; Savolainen 1993b, 16; Solomon 1997a, 1098; Solomon 1997c, 1136; Tuominen 1994, 65); sense-making is a process bound to space and time (Perttula 1994, 43; Solomon 1997b, 1125); and information seeking is a part of sense-making (see Dervin 1983, 3, 5; Perttula 1994, 43; Savolainen 1990, 80; Savolainen 1995, 261; Solomon 1997c, 1136, 1137; Wilson 1997, 41).

Furthermore, sense-making theory uses plenty of metaphors. The individual’s movement through time-space is depicted at two levels of abstraction. At the more concrete and metaphorical level, Dervin presents to us a picture of a man walking along a road, when he comes upon an impassable hole in the ground. In this situation, he is obviously facing a gap. What is he to do now? Well, the poor chap has no alternative but to build a bridge of his own across the gap, which helps him pass over the hole. Then he can resume his march onwards until he meets with another gap. (see Dervin 1992, 68–69)

At a more abstract and conceptual level, Dervin sees the individual’s movement as taking steps one at a time. Those steps at which he is forced to stop are moments of discontinuity. It is these steps that are of interest to the researcher. Each of these steps comprises of three stages or phases which constitute the (in)famous triangle of *situation*, *gap* and *help (use)* (see Fig. 1) that illustrates the process of sense-making. (see Dervin 1983, 7, 14; Dervin 1992, 68–69; Perttula 1994, 43.) These three concepts form the nucleus of the sense-making theory. They are the basic building blocks for constructing formal and substantive theories.

So as to be able to elaborate on the theory, we have to be clear about the meaning of the basic concepts which in this case also represent the various stages of a process. At the

general level, Dervin defines *situation* as "an epistemological time-space context that an individual would recognize as being meaningfully separate from other epistemological contexts" (Halpern & Nilan 1988, 170). In other words, situation is a point in time and space (Perttula 1994, 43) at which the individual constructs meanings (Dervin 1983, 9). The concept of *gap* means "an unclear aspect of a situation that a person feels the need to clarify in order to continue movement in a direction that the individual considers to be constructive or desirable" (Halpern & Nilan 1988, 170). *Help*³, on the other hand, stands for "the outcome or outcomes of Sense-Making aimed at addressing gaps" (ibid.).

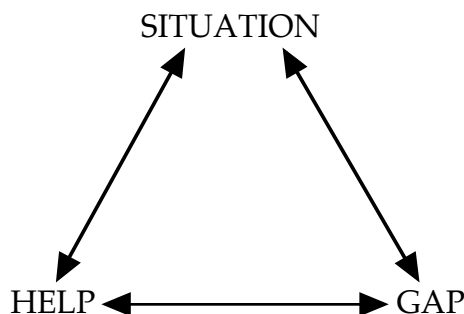


Figure 1. The sense-making triangle: situation–gap–help (source: Dervin 1992, 69)

To sum up, the basic dynamics of the sense-making triangle are as follows: the situation provides the context in which the individual needs to make sense of something (gap), which, in its turn, drives him to seek help. Having received this help, the individual is in a new or changed situation.

These are the core notions of the sense-making theory. The theory was introduced in 1972 (Dervin 1992, 61), and, being metatheoretical, it has only gone through minimal changes since.

... but what is it good for?

The metaphorical nature of the sense-making theory has its advantages. First, it is *easier to understand* the fundamental premises of the theory when they are brought before us in the guise of a simple story that so closely reflects our everyday experience. Second, the theory appears to be *universal*: it is applicable to several disciplines. Indeed, sense-making research has been done not only in information studies, but in many other branches of science as well (Tuominen 1992a, 33). The reason for this is the fact that the theory is multidisciplinary: it holds elements of at least communication studies, cognitive science, sociology and information studies (Savolainen 1993b, 26). The theory seems to be universal in another sense, too: the actor in the theory can be any type of entity: e.g. individual, group, organization or even society. In a third sense, the theory can be used to analyze sense-making virtually in any kind of context. (Dervin 1992, 70.) All in all, then, the theory would deserve to be called "a universal theory of sense-making". The universal nature of sense-making theory guarantees that a great variety and number of different theories and research questions can be formulated on the basis of it.

The sense-making theory places heavy emphasis on *context*: sense-making is not supposed to be explained by individual differences, such as character traits or demographics, but by contextual factors, such as situation or gap (Savolainen 1993a, 96; Savolainen 1995, 261; Talja 1997, 74; Tuominen 1992b, 118). Although this view has been criticized by some, context could be anticipated to play a great role especially in difficult situations.

³ Halpern and Nilan prefer the term *use*, but *help* is a more general word and therefore better suited for utilization at the metatheoretical level. "Help" is employed together with "use" by Dervin herself.

The *process character* is one of the strong points of the sense-making theory. The sense-making triangle is, first and foremost, a process model, not a conceptual model. The concepts in the sense-making triangle stand for stages of a process rather than mere states of being or concepts as such. The same pertains to the relationships (depicted by arrows) between the elements: they primarily indicate the course of the process, not the relationships between concepts. In addition to this, of course, sense-making is not only looked upon as a process that occurs in one situation, but also as a broader process which may involve the actor moving from one situation to another.

The sense-making theory is *holistic* in at least two respects. First, it aspires to represent the whole process of sense-making, from the arising of a situation to its resolution (cf. Solomon 1997a, 1098). Second, using the sense-making approach is a holistic research process, for it is applied all the way through a study from the formulation of research questions to the analysis of results (Dervin 1992, 70).

Something is missing ...

Having acquainted yourself with sense-making theory, sooner or later you will notice peculiar "gaps" in it. As you scrutinize the triangle of situation–gap–help, a logical shortcoming will stand out: how can the individual possibly proceed from "gap" to "help" directly? There is definitely something missing here: the bridge. According to *Collins Cobuild Dictionary*, "someone or something that bridges the gap between two things ... makes it easier for the difference between them to be made smaller or to be overcome" (Collins 1987, 170). In sense-making terms, gap-bridging signifies the individual's making of sense of whatever is puzzling about the situation. Consequently, *bridge* is a constructed sense which allows the individual to address the gap and get some benefits (help).

The element of "bridge" has been there in sense-making theory, but only implicitly. It needed to be made explicit. So instead of the *triangle* of situation–gap–help, we now have the *square* of situation–gap–bridge–help (see Fig. 2). In my opinion, the absence of "bridge" has considerably impoverished the sense-making theory and impeded information seeking research based on sense-making. This will become evident later when treating formal theory. The new stage increases the complexity of the sense-making model which it has been lacking for so long, and facilitates the construction of more diverse or holistic formal theories and research problems.

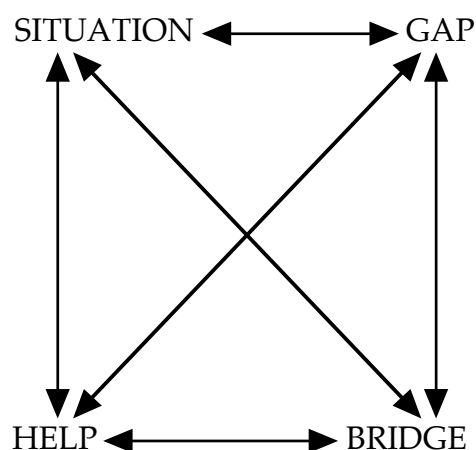


Figure 2. The sense-making square: situation–gap–bridge–help

... and not quite in the right place

The sense-making model is still not logically satisfactory. The theory presumes that all the

concepts in the model are equal, of the same quality. Are they really? If the process of sense-making is conceived as in Figure 2, the individual would prototypically begin the process in a situation, after which he would recognize a gap, after which he would build a bridge, after which he would get help from the constructed sense. To my mind, "situation" is different in quality from the other concepts. "Gap", "bridge" and "help" are stages of sense-making, whereas "situation" is rather the context of this process than a part of it. Situation does not just arise *before* sense-making, but sense-making occurs *in* a situation (see Fig 3).

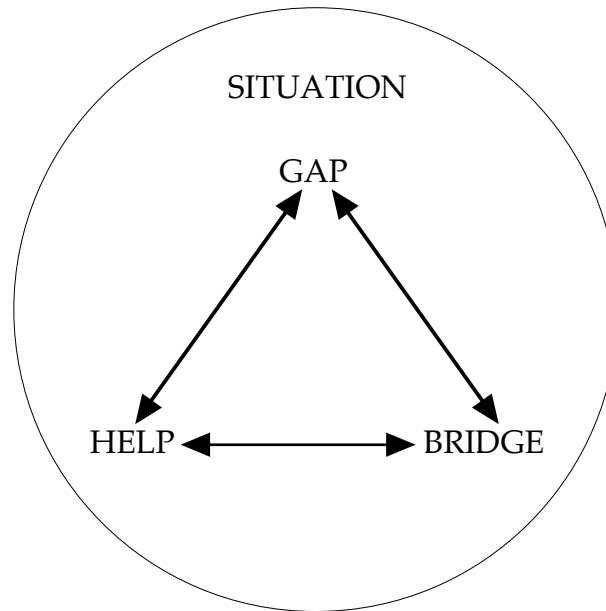


Figure 3. The process of sense-making: gap–bridge–help in situation

Thus "situation" provides the necessary context for sense-making. Sense-making always takes place in a certain situation, but not all stages of the "prototypical" process are required to manifest themselves in practice. The new model (in Fig. 3) more adequately shows how gap-defining, bridge-construction and help-getting are situated activities. Therefore the revised model should correspond to reality more accurately than the original sense-making triangle.

Formal sense-making theory

Provided that we have come up with a research problem, and are content with the metatheory above, we are ready to move on. We have got the highest level of abstraction sorted out, but we are still a long way from asking actual questions from study participants. The means to get there is to descend the ladder of abstraction step by step, until the concepts become concrete enough to be amenable to operationalization. The next step on this ladder involves choosing and disambiguating the major concepts of interest, as well as formulating the main research questions. A formal theory serves exactly this purpose.

*Formal theory*⁴ is "a set of propositions which furnish an explanation for a formal or conceptual area of inquiry, that is, a discipline" (Grover & Glazier 1986, 234). Thus the word "formal" does not denote here logical formalism as in Vakkari's and Kuokkanen's (1997) work, but rather the form of a theory rather than its substance. Formal theories

⁴ Wagner and Berger (1985) seem to ignore this level of abstraction. Their division of theories into metatheories and unit theories perhaps conveys an exceedingly black-and-white picture of theoretical variation to us.

incorporate a set of major concepts and their interrelationships, and they also contain discipline-specific ontological, epistemological and conceptual suppositions about reality. The cognitive function of formal theories is to guide researchers in formulating main research questions and constructing substantive theories. Thus, a formal theory could be called the "skeleton" of a theory. Unlike metatheories, formal theories should not be presented in a metaphorical form. Formal theories are not as rigid and stable as metatheories, either, and are therefore more liable to change. A theory of this kind cannot be tested until it is particularized as a substantive theory (Grover & Glazier 1986, 234).

A formal theory is much like a link between a metatheory and its substantive theories. On the one hand, its function is to disambiguate the metatheory, and on the other hand, its purpose is to bind various substantive theories together. If we had no metatheory, our formal theory would only appertain to information studies. It might be perfectly valid in explaining phenomena in our field, but it could not be generalized to other disciplines. Correspondingly, if we had no substantive theory, our formal theory might not be valid at all due to the absence of empirical testing. It could be generalizable to several disciplines, but it would be helplessly detached from the real world.

A formal theory can be generated in two opposite ways. The first (deductive) alternative is to take a metatheory as the starting point, and create a more concrete theory by specifying this metatheory. The second (inductive) alternative is to take one or more substantive theories, and construct a more abstract theory through the abstraction of these substantive theories. Because of the theme of the workshop, I opted for the first choice. This is how I proceeded in my study, too.

When building a formal theory, we must still keep in mind the more or less metaphorical conceptions of the metatheory. They are still in effect, although now implicitly, in the background. In the formal theory, the ideas of the metatheory are presented in a form that is a step closer to the real world. In a way, the formal theory is a rationalization of the metatheory.

Like metatheories, formal theories are not absolute, either. If necessary, we can often discard, change or add elements to suit the purposes of our study. The formal theory should, however, essentially reflect its parent, the metatheory. Careful consideration is required in selecting formal theoretical elements, because the formal theory determines what kind of questions we can ask and what the substantive theory will be like.

Formal sense-making theory?

Sense-making theory appears to be an interesting and promising framework, providing a multitude of different approaches to research. However, when we scrutinize sense-making theory at its various levels of abstraction, we will notice that there is a curious "gap" between its metatheoretical and substantive levels: the formal level is all but missing. That is, the metatheory has been directly operationalized in specific research settings as substantive theories without explicating, however, what sense-making theory could be like at the formal level at which the theory would apply across all research settings, but in *our* discipline (information studies) only.

The sole sense-making theory at the formal level that I have found to date is Halpern's and Nilan's "cognitive behaviors in information seeking-and-use cycle" (see Halpern & Nilan 1988, 175). The problem with that theory is that it disregards the situation which is a vital component in the sense-making theory. That theory is also too linear and perhaps too metaphorical. So under these circumstances, it may well be worthwhile to start from scratch, and "translate" the general sense-making theory into the "language" of information studies, so to speak.

A major cause for the problems of the sense-making theory is the fact that it offers no explicit guidelines for constructing theories based on it at lower levels of abstraction than the metatheoretical one. There is one fundamental limitation in the theory that makes it useless in many areas of information studies. That is, the actor in the theory is in the role of information seeker. It would require an abundance of ingenuity to study sense-making from the point of view of information producer or mediator.

The theory does say something about information seeking, but nothing comparable to a theory. It is postulated that information seeking is a part of sense-making (see Dervin 1983, 3, 5; Perttula 1994, 43; Savolainen 1990, 80; Savolainen 1995, 261; Solomon 1997c, 1136, 1137; Wilson 1997, 41); in fact, it is a central part of sense-making (Dervin 1983, 3). In Savolainen's view, sense-making is above all a process in which the individual tries to clarify problems that correspond to his cognitive gaps, and strives to find solutions to these problems by means of using his own ideas and/or information sources outside of him (Savolainen 1990, 80). Sense-making theory understands information simply as meanings that the individual builds at a certain point in time and space (see Dervin 1983, 5; Dervin 1992, 63). Hence information seeking is not regarded as an incident of transmission of a message from a sender to a receiver, but as a constructive process, as "personal creating of sense" (Dervin 1983, 5; see also Savolainen 1995, 261).

A general theory of situational information seeking

The metatheory already includes all the elements that are needed to construct a basic formal theory. They only have to be transformed into a semblance in which the concepts and their definitions match the terminology of information seeking. I will take the model in Figure 3 as the point of departure.

Situation is the only one of the four main concepts whose term and meaning remains relatively unchanged when transferred to the formal level. This is owing to the fact that "situation" is actually a multidisciplinary concept. If we wish to specify the concept for information studies, we could say that situation is a point in time and space (Perttula 1994, 43) at which the individual seeks information (cf. Dervin 1983, 9). In a similar vein, Dervin's definition of situation could be rephrased as "an *information seeking*⁵ context that an individual would recognize as being meaningfully separate from other *information seeking* contexts" (see Halpern & Nilan 1988, 170).

Gap is no longer, for in information seeking, gap is called "information need". *Information need* is the individual's conception of what information he needs to clarify "an unclear aspect of a situation" (cf. Halpern & Nilan 1988, 170).

Bridge can naturally be translated into "information seeking". I define *information seeking* as a process in which the individual attempts to find information through information sources in order to satisfy his information need (see Krikelas 1983, 6; Savolainen 1990, 71; Wilson 1977, 36). Information seeking includes the accidental discovery of information as well. By now, it should have become evident why "bridge" is such a central concept in sense-making theory, at least from the point of view of information studies: without it, we could only study information needs and use, but not information seeking.

Instead of *help*, we usually speak of "information use" in information studies. *Information use* refers to the outcomes of information seeking (cf. Halpern & Nilan 1988, 170). It is the way in which information helps the individual with his situation.

The model in figure 4 is a graphical presentation of a formal theory grounded upon sense-making theory. It is a direct derivative of sense-making theory which is applicable to the

⁵ The italics are mine; they indicate the substitution of some words in the original.

domain of information studies only. The new formal theory describes information seeking in any real-life context. To operationalize the theory, we must bring it down to the substantive level. Before doing this, however, we must decide what it is exactly that we want to study.

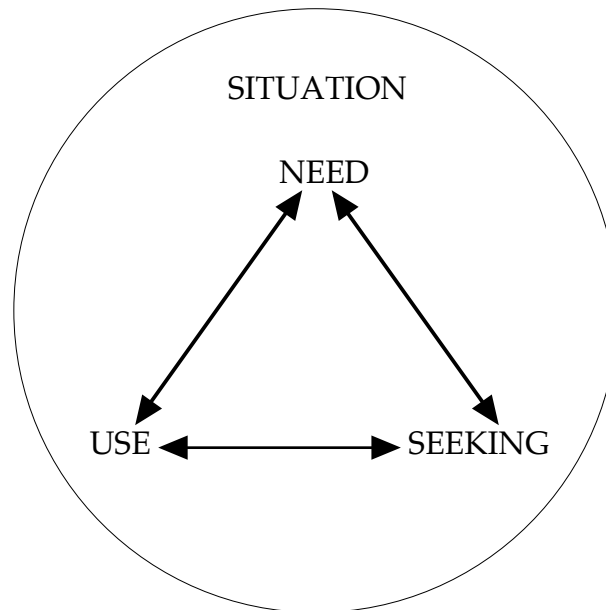


Figure 4. A general process model of situational information seeking

Depending on our research interests, we may take any or all of the concepts in the information seeking theory in our own formal theory. We may feel the need to divide some concepts into more manageable subconcepts before proceeding to the substantive level. This would occur if a main concept seems to be comprised of more than one concept. We may also add altogether new main concepts in our theory in order to give it more complexity and variation. These additional concepts will probably be factors that are presumed to have an impact on information seeking. Should these concepts be altogether new stages in the process, it might be wiser to put them forth already at the metatheoretical level.

In my own study, I am interested in the whole process of information seeking, not just in some parts of it. Therefore the basis of my own formal theory is the one presented above in its entirety. I have particularized one concept, "information seeking", by splitting it into three subconcepts: "information seeking strategy", "information source" and "received information". Furthermore, I have appended a new concept to the theory, "barrier to information seeking", which is a factor presumed to affect information seeking. All of these changes (or non-changes) were made to reflect my conceptualization of what is important in information seeking in my study.

In Figure 5 can be seen the latest version of my formal theory. The changes do require an explanation. First, "information seeking" has been subdivided into three concepts. *Information seeking strategy* can be defined as a general plan of action according to which the individual seeks information. *Information source*, in its turn, means a physical carrier of information from which the individual expects to get information (Murtonen 1992, 47). *Received information*, on the other hand, denotes the information that the individual receives from an information source. And finally, by *barrier*⁶ I understand a factor which the individual perceives as hindering his information-related activities (need, seeking or

⁶ Dervin has enumerated various barriers (see Chen & Hernon 1982, 19; cf. Savolainen 1993a, 33), but not really defined what a barrier is.

use). "Barrier" could have been introduced at the metatheoretical level, but perhaps this would have added too much complexity to the metatheory. As can easily be observed from Figure 5, the theory still operates at the formal level, not at the substantive level, for it is not confined to any particular research setting.

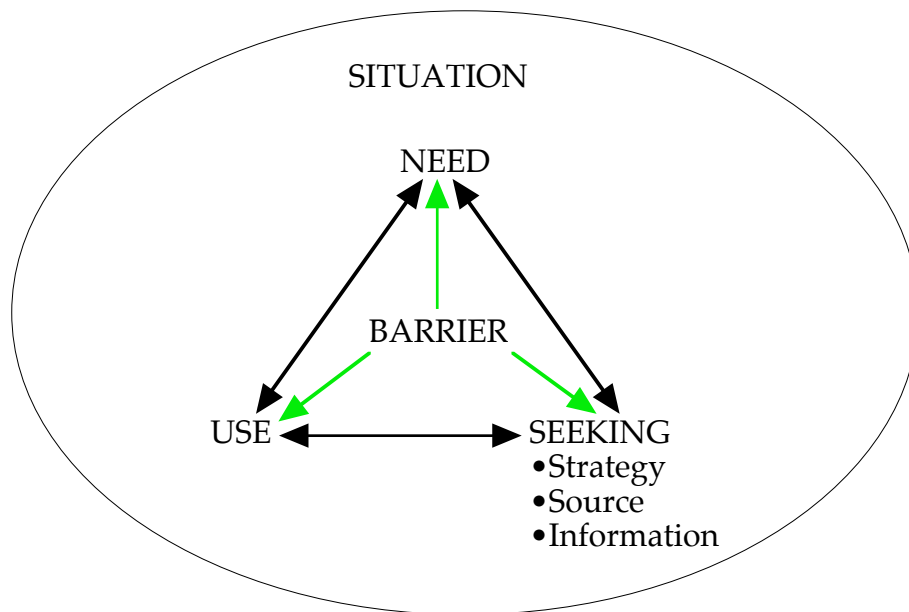


Figure 5. An expanded process model of situational information seeking

Generating general research questions

Now that the formal theory is ready⁷, we are in a good position to start formulating actual research questions. This is a rather simple procedure: the most elementary method is to take each concept in the formal theory, and convert it into a question. If we need more complexity, we can also ask questions about any or all of the relationships between two concepts. In the most elaborate framing of questions, the interplay between three or more concepts, or the dynamics of the whole process can be examined. Especially if you are a novice researcher, it is safer to start with basic questions. In any case, the questions should naturally echo the one research problem raised at the beginning.

Because paranormal information seeking has never been examined before (except by me; see Kari 1996), and because I intend to study the whole process of information seeking, and because I know that my substantive theory will be quite detailed, and because I am a beginner as a researcher, my main research questions are of the elementary kind. As you may remember, my research problem is: what is information seeking in the context of the paranormal like? Accordingly, I came up with these research questions (note how each question is connected with one concept in the formal theory):

- 1) In what kind of situations do people seek paranormal information? (*Situation*)
- 2) What are people's needs for paranormal information like? (*Need*)
- 3) How do people seek and/or find paranormal information? (*Seeking*)
 - a) which strategies of information seeking do they use? (*Strategy*)
 - b) what sources of information do they use? (*Source*)
 - c) what sense do they make of the received information? (*Information*)
- 4) How do people use paranormal information? (*Use*)
- 5) How do people experience barriers to paranormal information seeking? (*Barrier*)

⁷In reality, a theory is hardly ever ready in the sense of being final or perfect. Here "ready" can be understood as being prepared for the next step, that is, building a substantive theory.

As a thought experiment, let us pretend that I never created a formal theory for my study. In that event, I would have to base my research questions on the metatheory. First, the research problem would be stated as "what is sense-making in the context of the paranormal like?" Second, the research questions would look like this:

- 1) In what kind of situations do people make sense of the paranormal? (*Situation*)
- 2) What kind of gaps linked with the paranormal do people face in these situations? (*Gap*)
- 3) How do people make sense of the paranormal? (*Bridge*)
- 4) How do paranormal meanings help people? (*Help*)
- 5) How do people experience barriers to making sense of the paranormal?⁸ (*Barrier*)

The differences between the two sets of questions above should be enough to demonstrate the necessity of a formal theory. If the questions were indeed presented at the metatheoretical level, it would (or should) be almost impossible to ask meaningful, tangible questions at the substantive level. And yet this has been done over and over again.

Substantive sense-making theory

The task of theory building is nearing its end. We have managed to pull the metatheory down to the middle level of abstraction, thereby succeeding in giving the research area a meaningful form, as well as in asking tangible questions that can actually be answered. However fruitful these questions may be, they do not allow us to answer them directly. This is because the questions are still not specific enough. They must be further divided into subquestions whose answers can jointly respond to their respective main questions in due course. This subdivision cannot be accomplished until there is a theory behind it. This theory is no other than a substantive theory.

A substantive theory is the most concrete form of a metatheory. According to Grover and Glazier (1986, 233–234), *substantive theory* is "a set of propositions that furnish an explanation for an applied area of inquiry". In other words, a substantive theory⁹ is a set of concepts and their interrelationships which provides an explanation for certain (social) phenomena (Vakkari and Kuokkanen 1997, 498). The concepts in substantive theories comprise of main concepts and their subconcepts. Substantive theories may also incorporate ontological, epistemological and conceptual suppositions about a particular research setting. The cognitive function of substantive theories is to guide researchers in constructing specific research questions and operational questions, as well as hypotheses. Thus a substantive theory could be called the "flesh" of a theory. Substantive theories should be presented in as disambiguous and concrete form as possible. They are in a constant flux; indeed it may be difficult to find a satisfactory, permanent form for them. Unlike a metatheory (and a formal theory), a substantive theory is empirically testable (Vakkari & Kuokkanen 1997, 498).

A substantive theory is a concrete manifestation of a formal theory and a metatheory. It can be generated in two opposite ways. The first (deductive) alternative is to take a formal theory as the starting point, and create a more concrete theory by specifying this formal theory. The second (inductive) alternative is to begin with a formal theory, conduct a study using the main research questions, and, grounded on the collected data, create subconcepts for those of the formal theory. Because of the theme of the workshop, I opted

⁸ This question presupposes that "barrier" has been defined at the metatheoretical level.

⁹ This is Grover's and Glazier's (1986) term. Wagner and Berger (1985) as well as Vakkari and Kuokkanen (1997) use the expression "unit theory". However, "substantive theory" can be considered as more successful as a term, because it corresponds to its referent more closely than "unit theory". The contrast between "substantive" and "formal" is also easier to understand than between "unit" and "formal". That is, a substantive theory, unlike a formal theory, includes substance or content. On the other hand, if we think about "unit theory", the term tells us very little. A unit of what?

for the first choice. This is how I proceeded in my study, too. Even this being the case, a substantive theory must be sensitive to the suggestions that emerge out of data. When partitioning main concepts, they should always have at least two subconcepts, or none at all. The latter instance can only occur when the formal theoretical concept is already concrete enough.

Like metatheories and formal theories, substantive theories are never absolute, either. If necessary, we can almost without exception discard, change or add elements (subconcepts) to suit the purposes of our study. The substantive theory should, however, essentially reflect its parent, the formal theory, and its grandparent, the metatheory. Exceptions are permitted and perhaps even welcome, because new concepts sometimes lead into new and interesting developments at the substantive and possibly formal (or even metatheoretical) level. Subconcepts can most effortlessly be devised by borrowing them from related substantive theories, or by perusing literature that deals with the formal theoretical or metatheoretical level of the substantive theory. Relevant concepts can also be suggested by collected data, or they can even be made up through thinking or intuition.

The choice of subconcepts should depend on how interesting, relevant and fruitful they seem in proportion to the formal theory and the main research questions. During the course of the research process, the relevance of subconcepts often fluctuates, and we should not hesitate to change our theory. Nevertheless, consideration is required in selecting substantive elements, because the substantive theory directly determines what kind of questions we can ask and what answers we can get.

Substantive sense-making theories?

The research community has seen a plethora of substantive sense-making theories, with virtually every sense-making study introducing a slightly different version from that of others. This is because a substantive theory must be applicable to a particular research setting. It must be specific enough to allow for a straightforward operationalization of the theory into concrete questions. Because the researcher is interested in certain questions, each substantive theory tends to be unique. What is slightly alarming, I think, is the lack of systematization of sense-making theories at all levels of abstraction. So far, to my knowledge, there has been no effort to synthesize various substantive sense-making theories or reflect upon their impact on theories at higher levels of abstraction. In other words, growth of knowledge on information seeking in sense-making has been minimal.

I cannot possibly list all the existing substantive theories here, but at least I can enumerate presumably the most fruitful operational (substantive) concepts under each main concept. In the literature mentioned below, the various categories of the concepts as well as other subconcepts not brought out here can be found.

Situation

- Situation Movement State (Dervin 1983; Kari 1997; Nilan 1985; Perttula 1993).

Information need (gap)

- Descriptive focus (Dervin 1983)
- 5W focus (Dervin 1983; Dervin et al. 1982)
- Entity focus (Dervin 1983; Dervin et al. 1982)
- Time focus (Dervin 1983, 1992; Dervin et al. 1982).

Information seeking (bridge)

- There are none. Here we have to resort to non-sense-making literature.

Information use (help)

- Helps and Hurts (Dervin 1983, 1989, 1992).

Barrier to information seeking

- Type of barrier (Chen & Hernon 1982, 19; cf. Savolainen 1993a, 33).

When selecting concepts for a substantive sense-making theory, it is useful to keep in mind that these operational concepts need not necessarily come from sense-making research. They may well be borrowed from other sources, as well. This cross-fertilization could give a boost to theory growth which sense-making theory might never achieve on its own.

A theory of paranormal information seeking

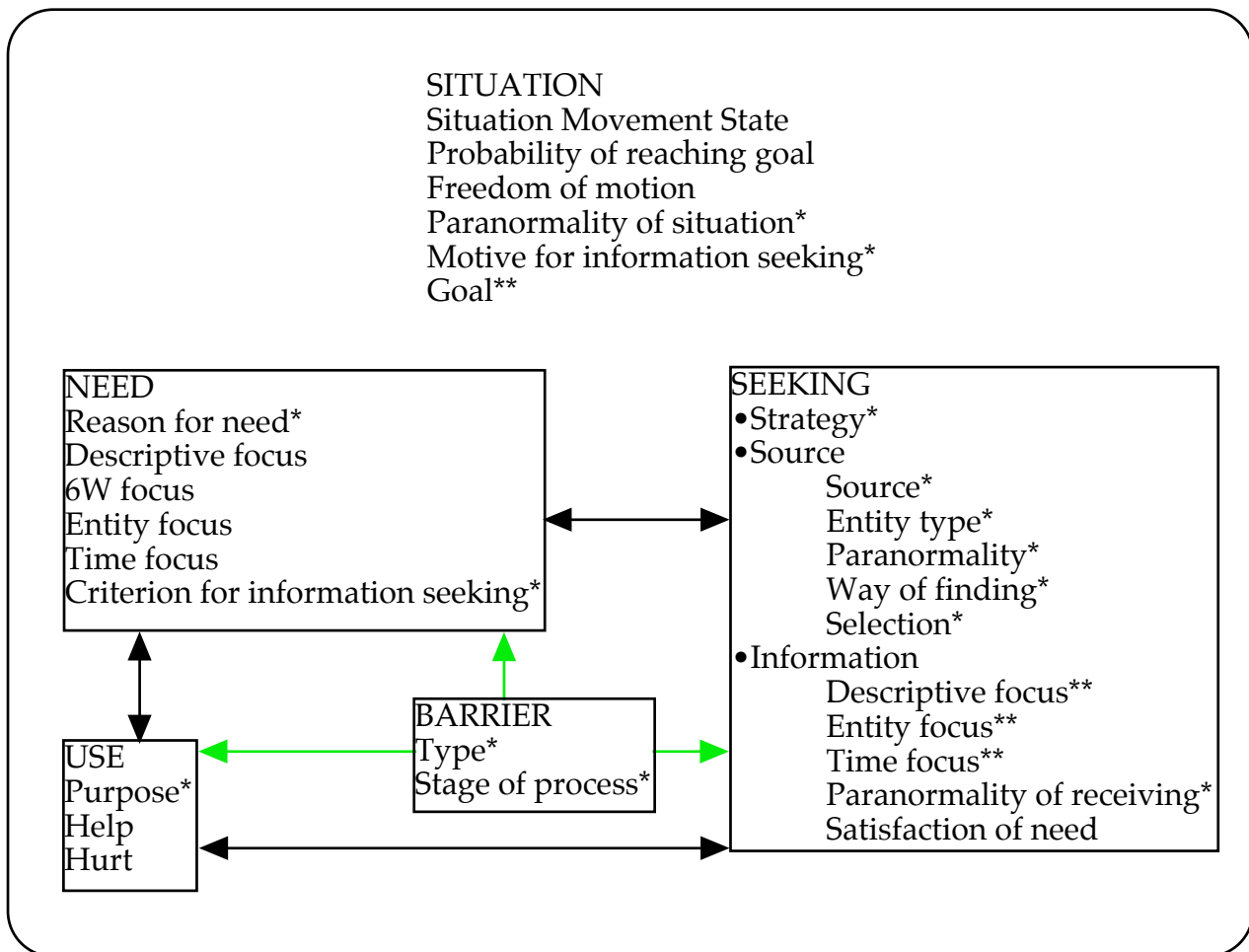
Before going to the details of my substantive theory proper, I ought to say something about the domain of my study, that is, the paranormal. The least I can do is to define what I mean by "paranormal" and "paranormal information". Probably the most typical way to define *paranormal phenomenon* is to regard it as a hypothetical phenomenon which contradicts the scientific laws that are taken for laws of nature — or, more generally — the most fundamental suppositions and principles of science — or, most generally — today's scientific conception of the world (see Alcock 1981, 3; Alcock 1991, 151; Björkhem & Johnson 1986, 18; Collins & Pinch 1979, 238; Kurtz 1985, 504), on the one hand, and the expectations of common sense and our everyday experiences (Kivinen 1989, 47; Kurtz 1985, 504; Schumaker 1987, 451; Tobacyk & Milford 1983, 1029), on the other hand. Due to their controversial nature, *my dissertation will not take any stand whatsoever on the existence of these phenomena.*

The concept of *paranormal information* is easy to define once we know what "paranormal phenomenon" means: paranormal information is information about paranormal phenomena. However, the term can also be used to refer to information that has supposedly been acquired by supernatural means.

The basic structure of my substantive theory is dictated by the formal theory delineated previously. The subconcepts comprise of all the sense-making concepts listed above, plus other concepts found in information seeking literature, and a few concepts personally developed by me to take advantage of the subject matter, the paranormal.

The model in Figure 6 is a conceptual map of my current substantive theory. I had to rearrange the positions of the main elements to make them fit, but otherwise the model is a specification of its formal theoretical counterpart (in Figure 5). As far as I know, those subconcepts marked with an asterisk (*) have not been used in sense-making research before. Thus, of the 28 operational concepts, 14 (half) are new, half old in the sense-making tradition. What is more, the model includes four subconcepts (marked with "***") which have been utilized in sense-making research before, but under different main concepts. In my theory, these particular subconcepts are duplicated under two different main concepts. The purpose behind this is an objective to analyze how an intention is realized (or whether it is realized at all). So for instance, I can compare to what extent the time focus of received information corresponds to that of information need.

Normally, every subconcept (and maybe some of their interrelationships) should be defined next, but space restrictions do not allow me to go into the details of the theory. Here it merely serves as an example of what a substantive theory might look like. By no means does it have to be as complicated as mine; a substantive theory could very well consist of just a few concepts and their mutual relationships.



* Subconcept originates from outside sense-making research

** Subconcept originates from sense-making research, but is borrowed from another main concept

Figure 6. A process model of situational information seeking in the context of the paranormal

Specifying specific research questions

Creating subquestions is no more convoluted than making up main research questions. The concepts (and their relationships, if necessary) are simply turned into questions. At this stage, relationships between subconcepts may also be expressed as hypotheses. Specific *research questions* are not necessarily the same as those that are actually asked from the participants of the study. These are *operational questions*, and they are grounded on research questions. The primary difference between these is that operational questions should match the participants' picture of the world and use their terminology. If we use conceptual jargon, the questions may not make much sense to the participants. Of course, if the method of data collection is observation, we do not have to think about this problem at all. Below I will just give you an example of a list of study questions by presenting the complete collection of research questions in my own study:

- 1) In what kind of situations do people seek paranormal information? (*Situation*)
 - what is their Situation Movement State in these situations? (*Situation Movement State*)
 - how probable is it that they reach their goal? (*Probability of reaching goal*)
 - how free is their movement towards the goal? (*Freedom of motion*)
 - do they consider their situations as perfectly normal or do they perceive some paranormal elements in these situations? (*Paranormality of situation*)
 - is the motive for their action interest, problem or change? (*Motive for information seeking*)
 - what goals do they have in these situations? (*Goal*)
- 2) What are people's needs for paranormal information like? (*Need*)
 - why do they need this information? (*Reason for need*)
 - about what topics do they need this information? (*Descriptive focus*)
 - what questions do they have in their mind?(*6W focus*)
 - on what entities do these needs focus? (*Entity focus*)
 - on what time do these needs focus? (*Time focus*)
 - what is the primary criterion for seeking this information? (*Criterion for information seeking*)
- 3) How do people seek and/or find paranormal information? (*Seeking*)
 - a) which strategies of information seeking do they use? (*Strategy*)
 - b) what sources of information do they use? (*Source*)
 - what sort of sources do they use? (*Source*)
 - what is the entity type of these sources? (*Entity type*)
 - are these sources normal or paranormal? (*Paranormality*)
 - how do they find these sources? (*Way of finding*)
 - why do they use these sources? (*Selection*)
 - c) what sense do they make of the received information? (*Information*)
 - about what topics is the information? (*Descriptive focus*)
 - on what entities does the information focus? (*Entity focus*)
 - on what time does the information focus? (*Time focus*)
 - do they get the information by normal or paranormal means? (*Paranormality of receiving*)
 - to what extent does the information satisfy their information needs? (*Satisfaction of need*)
- 4) How do people use paranormal information? (*Use*)
 - to what purposes do they apply this information? (*Purpose*)
 - how does this information help people? (*Help*)
 - how does this information hurt people? (*Hurt*)
- 5) How do people experience barriers to paranormal information seeking? (*Barrier*)
 - what type of barriers are perceived? (*Type*)
 - at which stages of the process do these barriers emerge? (*Stage of process*)

Categories

The theoretical basis of our study ought to be in good order now. The only thing that is still missing is categories. In order that phenomena occurring in research data can be meaningfully compared and contrasted, we need to further divide subconcepts into categories. These represent the different values of variables. Without categories, empirical analysis would tell us virtually nothing about what is going on in the real world.

Categories for subconcepts can be found in literature, often in connection with their relative subconcept. Categories also frequently emerge out of data, so the researcher should keep his eyes open. Categories have naturally been developed for all sense-making subconcepts, as well. However, a system of categories is usually never final, and sense-making theory is no exception in this respect. Suffice it to say that although the analysis of

the interview data for my study is only about to begin, it has already suggested new categories for sense-making subconcepts.

It could be this

The final question about sense-making remains: what *is* sense-making theory? As far as I can see, it is essentially a conceptual lens or a point of view in the research of seeking meaning in the real world, and as such, far from perfect.

This paper has been an attempt at making some sense of the sense-making theory, but at the same time, also an exercise in theory-building. The main purpose of the treatment was to discuss the fruitfulness of the sense-making theory in constructing theories and formulating research questions. By now at the latest, it should have become evident that the sense-making theory is indeed a versatile theory which has regrettably suffered from the lack of explicitness and development. Including the formal theoretical level in the sense-making framework is a major factor in clarifying the theory, which will hopefully facilitate empirical sense-making research. But even this is not enough. The interaction between the theory and data is a major force which should be taken into consideration. If the theory cannot be moulded by data, its development will become a highly questionable issue.

The theory-data linkage is not the only catalyst of theory growth, however. Sense-making theory could benefit from being influenced by other, related theories. This would ordinarily take place at the substantive level, or sometimes at the formal level of abstraction. Integration of elements at the metatheoretical level would be a highly ambitious enterprise indeed. The only major theory in addition to sense-making theory that involves sense-making is Carol Kuhlthau's theory of seeking meaning in the context of learning (see Kuhlthau 1991, 1993a, 1993b). The partial or complete integration of these two theories would be a monumental task, because, after all, we are talking about two metatheories here. On the other hand, the results of this merger might be equally magnificent.

Parallel to explicating the sense-making theory, I have aimed at deliberating about how to build theories and ask research questions in general. Understanding the basic principles of theory-construction has probably been easier when they have been illustrated by examples drawn from my own study. Overall, the discourse has been perhaps too pedantic. This is because I have been trying to be explicit in order to prevent misapprehensions. In practice, building theories or research questions is never as systematic or straightforward as presented here. Theory-construction itself is a form of sense-making, and for this reason, a theory develops step by step in hermeneutic circles rather than in a rush of a steady stream.

If you are still wondering if you really need a theory for your own study, the answer is "yes". No matter how rudimentary it may be, an elementary theory is always better than no theory at all. It is an invaluable tool in making order out of the chaos of data. It also creates opportunities for the genuine growth of knowledge.

"How complex should the theory be then?" In principle, no more complex than is necessary for you to be able to answer your research questions. The theory could comprise of just two concepts and their relationship, or it might include dozens of concepts along with their interrelationships and all their background suppositions. It all depends on the scope of your study.

"Do I need all these levels of abstraction?" This depends on at which level you wish to contribute to the body of knowledge. If your study is empirical, you should emphasize the

substantive and formal levels of the theory. If your study is theoretical, you ought to give more weight to the metatheoretical end of the spectrum. There is no obligation to explicate the theory at all levels of abstraction. However, the omission of a level should be grounded on a conscious decision, for it has an effect on the understandability and/or applicability of your theory.

Constructing a theory, be it a sense-making theory or otherwise, is a creative and challenging process. Like artists, we are trying to capture a portion of the world in a single work of art. Unlike artists, we must also check whether our picture matches with reality. At any rate, the possibilities for creation are only constrained by our imagination.

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