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### Emotions as motivators for information seeking: A conceptual analysis

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#### 1. Introduction

In information seeking studies so far, affective factors have occupied a residual role. As Fisher and Landry (2007) aptly put it, "affect as a lens for understanding information behavior has always lurked predominantly in the field's theoretical shadows" (p. 211). Nevertheless, there are some prominent contributions to this area. Wilson (1981) was one of the first to identify affective needs as important motivators for information-seeking behavior. Similarly, Dervin's (1983) sense-making theory mandated attention not only to the cognitive embodiment of information seeking, but to the emotional framings of knowing as well. Kuhlthau's (1991) information search process (ISP) model is a landmark contribution demonstrating the constitutive role of affective factors such as feelings and mood. In recent years, there has been a growing interest in the theoretical elaboration of the affective factors in information seeking and use, as exemplified by Nahl's (2007a; 2007b) social-biological information technology model.

These studies share the assumption that affective factors can significantly motivate people's ways of accessing, seeking and using information sources in diverse contexts such as work task performance and learning. The present study seeks to further elaborate the conceptual picture of affective factors as motivators for information seeking. More specifically, drawing on a conceptual analysis of major studies on affective factors in the context of information seeking research, this work specifies how positive and negative emotions and feelings such as joy, thrill, anxiety and fear give rise to information seeking or limit it. The research idea originates from a framework outlined by Dervin and Reinhard (2007). They introduced an insightful scheme by identifying eight major viewpoints on emotional factors in the fields of library and information science (LIS), and communication science. The viewpoints include, for example, *task process* => *emotion*, suggesting that emotions emerge out of the performance of task process, and *emotion* => *activity*, proposing that emotions give rise to activities such as information seeking. Since Dervin and Reinhard did not examine their assumptions in greater detail, their study opened the door to an opportunity for a deeper analysis.

#### 2. Problem statement

The present study concentrates on one of the viewpoints identified by Dervin and Reinhard (2007), that is, *emotions* => *motivation* (*activating* < = > *inhibiting*). This viewpoint was taken into closer consideration because it indicates in a nutshell how library and information scientists and communication researchers have approached the motivational roles of emotions. The study of this issue is important because the elaboration of the motivational aspects of emotions deepens our understanding about why people are willing to start, expand or stop information seeking and why they sometimes want to avoid information sources.

The above viewpoint can be elaborated further by scrutinizing the conceptualizations of emotions and feelings: how, in fact, are they characterized as factors that trigger or inhibit information seeking? To examine this issue, the present article draws on the ideas of appraisal theories that currently underpin a significant body of research on the study of emotions (Mulligan & Scherer, 2012). More specifically, key ideas of the appraisal theories were used as a lens to identify relevant elements of the conceptualizations of emotions and feelings. One of the key ideas is that the motivational aspects of emotions can be approached by examining the modes of *action readiness* triggered by emotions and feelings. In general, action readiness refers to a motivational state to approach or avoid an object. Transferred to the context of information-seeking behavior, the question about action readiness deals with the extent to which individuals are inclined to seek access to potential sources of information or to avoid them. This leads to the main research task of the present study: to find out how researchers have conceptualized emotions and feelings as motivators for information seeking, as viewed from the perspective of the appraisal theories. The focus is specifically on information-seeking behavior; other domains of information behavior, for example, information retrieval, will not be reviewed.

To this end, the present study addresses the following research questions:

- RQ1: How have researchers conceptualized the modes in which emotions and feelings motivate information seeking?
- RQ2: In which ways have researchers characterized the motivational roles of positively and negatively colored emotions and feelings?

### 3. Literature review

#### 3.1. Affective factors and their motivational aspects

There are various approaches to explaining affective phenomena (or affective factors), and no consensus has been reached among researchers about the nature of emotions (e.g., Cowie, Sussman, & Ben-Ze'ev, 2011). Somatic theories of emotion argue that bodily responses cause emotional reactions while appraisal theories suggest that emotions result from the evaluation of events encountered by the individual (de Sousa, 2012). The multiplicity of approaches is partly due to the different definitions of the key terms such as affect, emotion, feeling, and mood (Mulligan & Scherer, 2012, p. 346).

Even though there is no generally agreed definition of the affective factors, the characterization provided by Davidson, Scherer, & Goldsmith, (2003) may be used to clarify the conceptual chaos. In their view, *affective phenomena* can be divided into six main categories:

- *Emotion* refers to a relatively brief episode of coordinated brain, autonomic and behavioral changes that facilitate a response to an external or internal event of significance for the organism.
- *Feeling* is a subjective representation of an emotion. Feelings can reflect any or all of the components that constitute emotion.
- *Mood* typically refers to a diffuse affective state that is often of lower intensity than emotion but considerably longer in duration.
- *Attitudes* are relatively enduring, affectively colored beliefs, preferences and predispositions toward objects and persons.
- *Affective style* refers to relatively stable dispositions that bias an individual toward perceiving and responding to people and objects with a particular emotional quality, emotional dimension, or mood.

- *Temperament* refers to particular affective styles that are apparent early in life and thus may be determined by genetic factors. (p. xiii)

From the perspective of the present study, cognitive approaches to affective factors are particularly relevant because it is assumed that in the context of information seeking emotions mainly result from people's interpretations and explanations of their circumstances. Cognitive approaches mainly focus on emotions and feelings, as does the present study. Further, *appraisal theories* provide a relevant viewpoint because they conceptualize the ways in which emotions and feelings may lead to action readiness. Since the 1980s, researchers have developed different versions of the appraisal theories (Moors, Ellsworth, Scherer, & Frijda, 2013). Importantly, they share a basic premise suggesting that an individual's evaluation of his or her circumstances—current or remembered or imagined—plays a crucial role in the elicitation and differentiation of his or her emotions (Ellsworth & Scherer, 2003). Emotions are directed at objects, events, or situations. Appraisal theorists suggest four major criteria or checks of relevance of the object, event, or situation (Mulligan & Scherer, 2012):

- *novelty* (suddenness, unfamiliarity, or unpredictability)
- *intrinsic pleasantness or unpleasantness*
- *goal relevance* (pertinence, or conduciveness of a stimulus or situation for the momentary hierarchy of goals/needs);
- *coping potential* (checking the extent to which an individual can deal with a particular object or event regarding degree of control of the situation and of power to influence the consequences of an event; the extent to which one can live with the consequences of an event, i.e., how well one can adjust). (p. 350)

Generally, the first appraisal in the sequence is that of novelty: something in the environment (physical, social, or mental) changes, and the person's attention is attracted. An orienting response may occur, and the person is in a state of readiness for further emotional responding. If whatever attracted the person's attention cannot be disregarded as irrelevant to his or her well-being, further appraisal will take place. Often, the next step is a sense of intrinsic pleasantness or unpleasantness. Especially when the valence is negative, further appraisals ensue, and the emotional experience changes from "feeling good" or "feeling bad" to some more differentiated emotion, for example, joy or anxiety (Ellsworth & Scherer, 2003; Scherer, 2013).

Appraisal theories take a functional approach to emotion, insofar as appraisals lead to reactions whose function is to deal with specific situation types having some significance for an individual (de Sousa, 2012). Thus, thanks to appraisal, emotions have a strong motivational force that typically produces states of action readiness to help individuals adapt to or deal with important events and situations in their lives (Mulligan & Scherer, 2012). Action readiness refers to a motivational state pertinent to one's relationship to some object appearing in a situation or in the context of an event. The motive state aims to establish, maintain, or modify one's relationship with the external world as a whole, with an object in that world, or with an object of thought or imagination. Action readiness can include a variety of modes. Positive modes include *approach* (moving toward an object), and *attending* (wanting to pay attention to an object). Negative modes of action readiness can be exemplified by *rejection* (not wanting to do anything with an object) and *avoidance* (moving away from an object) (Frijda, Kuipers, & ter Schure, 1989). Appraisal theorists remind, however, that action readiness is not the sole determinant of behavior; it may also be triggered by habitual dispositions and situational factors (Scherer & Ellsworth, 2013).

### *3.2. Affective factors as motivators for information behavior*

In LIS, the affective factors of information behavior have been discussed since the 1980s. Lopatovska and Arapakis (2011) provide a seminal review of approaches and methods used in the study of emotions, with a specific focus on studies of information retrieval and human-computer interaction. The review demonstrates, for example, that positive emotions experienced during database searching are usually associated with personal interest in the search process and satisfactory search results, while negative emotions are elicited by software failure and confusing search strategies. Positive emotional responses to search process include, for example, comfort and satisfaction, while negative emotions or feelings entail anxiety and frustration (Lopatovska & Arapakis, 2011).

Dervin and Reinhard (2007) also offer a useful overview of studies on affective factors in information seeking. They conclude that LIS researchers have largely seen negative emotions such as anxiety as the main motivators for seeking information. Moreover, in LIS, motivations are conceptualized as arising from contextual or personal requirements. Emotions may orient individuals toward specific activities or behaviors to accomplish their information seeking and use. Emotion has also been conceptualized as a factor impacting the selection of information sources; emotion has thus been characterized as an impetus to behavior. Monitoring and blunting theory provides a relevant example of the conceptualization of factors such as these (Baker, 2005; Miller, 1980). This posits that people facing stressful or aversive situations differ in their information behaviours. Monitors are people who seek information to help them to cope with stress, while blunters avoid information when they are faced with a stressful situation because it increases their stress level.

Savolainen (2011) reviewed how information scientists have conceptualized the cognitive and affective motivational attributes of the constructs of information need and uncertainty. The findings indicate that the affective attributes of information need are characterized in general terms only, while the construct of uncertainty is elaborated in greater depth. The most important contribution to this issue is provided by Kuhlthau's information search process ISP model. Kuhlthau (1991) identified a variety of positive and negative feelings experienced by information seekers at the various stages of ISP. As such feelings are not, however, conceptualized as motivational factors, Kuhlthau's model does not play a role in the present study. In her model, the motivational aspects of the affective factors are discussed in terms of mood. Kuhlthau (2004, p. 98) defined mood as an attitude that the individual takes towards potential sources of information during various stages of the ISP. She identified two types of mood. An invitational mood encourages the individual to open the range of possibilities in a search, while an indicative mood narrows the focus of the information-seeking process.

Nahl has contributed to the study of the affective factors in information searching in particular by elaborating the social-biological information technology model (Nahl, 2007a; 2007b). The main goal of the model is to demonstrate how the cognitive and affective domains of humans are organically interdependent in processing and using information (Nahl, 2007b.). The model connects information behavior to two particular biological functions of the human affective system: information reception and information use. Of these, information reception denotes the processes of information searching or seeking, including information encountered incidentally. The model demonstrates that information behavior consist of a continuous dynamic flow of individual biological procedures in an attempt to adapt and cope within a context (Nahl, 2007a.). The affective subsystem deals with emotions and motivations, and it determines the consummatory value of the information first appraised by the cognitive subsystem. More specifically, the affective subsystem is

involved in promoting the information seeker's confidence and satisfaction. The affective subsystem also includes the continuous motivational energy provided by one's intent, goal, purpose, use, as well as the emotional dynamic features that determine the quality of the search process. The emotional features include perseverance, frustration, hope, disappointment, excitement, and disbelief, for example.

Finally, the motivational aspects of affective styles have been characterized from the perspective of personality theories. These theories focus on relatively stable affective dispositions as constituents of personality traits. Heinström (2010) demonstrates that personality traits incorporate affective dispositions that influence on the intensity of information seeking. For instance, negative affectivity manifests itself in anxiety-driven information seeking. It tends to be frantic, with a narrow focus on threat-related stimuli and ways to control and eliminate them. Information seeking is triggered by goals such as finding calm from the worries, intrusive thoughts and concerns that trouble the mind. Information seeking can also be driven by positive emotionality. It may manifest itself in cases in which an individual is allowed to focus on tasks or hobbies that correspond to his or her genuine interests. The personal interest feeds positive energy, stimulates excitement and fills the moment of information seeking with joy. Joy results in active information seeking, which is of expansive and invitational kind. Sometimes, information seeking of this kind can be culminated in the experience of flow, that is, the feeling of intense enjoyment, where the individual is completely immersed in what he or she is doing.

#### **4. Theoretical framework**

The terminological chaos characteristic of the studies of affective phenomena could be clarified by following the idea of Davidson et al. (2003, p. xiii). Thus, affective factors are referred to as an upper level concept that covers a set of sub-concepts such as emotion, feeling and mood. The present study focuses on the motivational aspects of emotion and feelings because they are the most relevant categories from the viewpoint of the appraisal theories. As appraisal theories provide a generic perspective on the study of emotions, these theories can also be used to review the motivational aspects of emotions in the specific context of information seeking. More specifically, appraisal theories provided a relevant lens through which the conceptualizations of the motivational aspects of emotions and feelings could be scrutinized in a more analytical way by devoting attention to how researchers have characterized the relationships between (i) emotions and feelings, and (ii) readiness to seek information. The research framework is depicted in Figure 1.

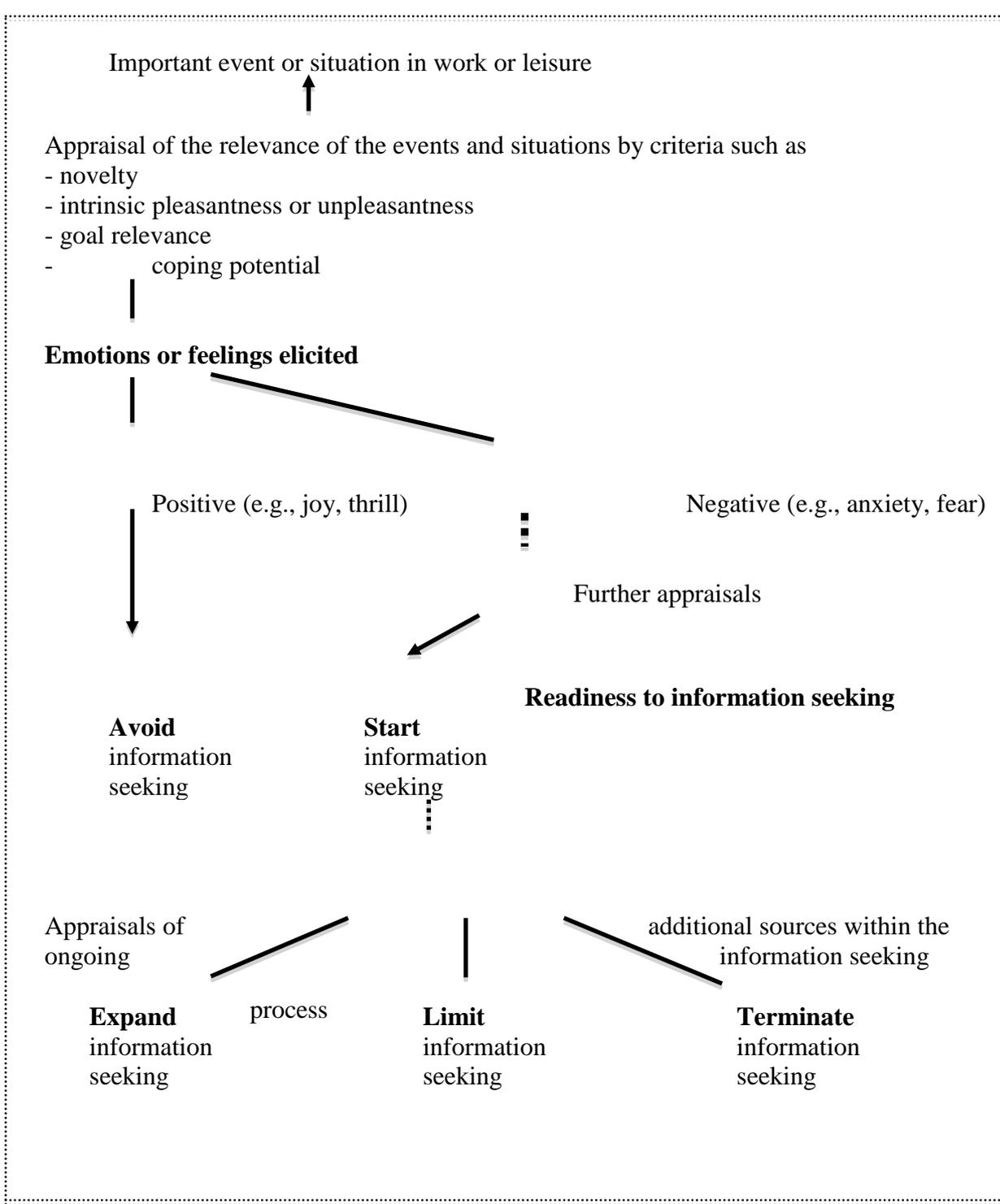


Figure 1. Research framework

Figure 1 suggests that appraisals eliciting emotions and feelings are made in the context of important, i.e. non-trivial, events and situations in work and leisure. For clarity, Figure 1 is intentionally kept simple by exemplifying emotions and feelings that represent the extremes of the continuum of positive and negative affect, that is, joy and thrill versus anxiety and fear. However, it

is possible that emotions and feelings experienced during the information seeking process are less strong. Thus, they can be placed in the middle ground of the continuum, as exemplified by emotions such as satisfaction and irritation. Events giving rise to emotions may occur, for example, while performing an urgent work task or enjoying hobby activities. The events indicate changes in one's circumstances, for example, accidental breakdown of computer software or finding a tourist attraction while surfing on the web. First, the event is appraised by devoting attention to its novelty, for example, unpredictability. Then, the pleasantness or unpleasantness of the event is appraised. If the event, e.g., finding a tourist attraction, is appraised as pleasant, positive emotions or feelings such as joy or thrill may be experienced. In the case of an event such as computer breakdown, the sense of unpleasantness can trigger further appraisals. They may concern the goal relevance, for example, whether the unpleasant event will mean that the ongoing work task has to be postponed. The appraisal may also concern the coping potential, for example, the possibilities of finishing the postponed task tomorrow.

Most importantly, however, Figure 1 suggests that emotions or feelings arising from appraisals result in readiness to seek information in order to deal with the changes brought by the event. Readiness for information seeking is a motivational state generating preparation for overt action. Figure 1 specifies five modes of action readiness that will be discussed in greater detail below. First, a motivational state can lead to avoiding any information seeking. In the context of the computer breakdown, an individual may prefer trying to solve the problem by him- or herself. Second, a motivational state may result in the start of the information seeking process, for example, asking advice from a colleague who is familiar with computer programs. Third, within an ongoing process of information seeking, further appraisals may be focused on the additional sources of information available for the problem solving. Emotions and feelings elicited by such appraisals may result in readiness to expand the information-seeking process by consulting a website providing help for solving computer problems. However, the appraisals can also lead to limiting the range of the information seeking process so that only a few additional sources will be accessed. Finally, emotions and feelings can result in readiness to terminate the information-seeking process.

## 5. Method

A conceptual analysis was made by focusing on studies that explicitly review the affective factors of information seeking. To identify relevant material, appropriate databases were searched using keywords like affect, affective factors, emotion and feelings. 85 relevant documents were identified, and of these, a final corpus of 30 articles, books and conference papers explicitly discussing the motivational aspects of emotions and feelings was scrutinized by means of conceptual analysis. This is a method that treats concepts as classes of objects, events, properties, or relationships. It involves defining the meaning of a given concept by identifying and specifying the contexts in which any entity or phenomenon is (or could be) classified under the concept in question (Furner, 2004). More specifically, the documents were analyzed by devoting attention to how researchers have described or defined:

- the qualities of individual emotions and feelings as factors that motivate information seeking (for example, the ways in which anxiety is characterized as a motivational factor in the particular context of information seeking)
- the ways in which diverse emotions and feelings drive, expand, limit or terminate information seeking (for example, how anxiety is conceptualized as a factor that limits the seeking of health-related information).

Relevant text portions (paragraphs and sentences) focusing on the above issues were first identified. This material was then read several times in order to identify individual characterizations or

definitions of the main concepts (emotions and feelings) in relation to the motivation to seek (or avoid) information. More specifically, the texts chosen for analysis were subjected to open coding to identify the main categories describing emotions and feelings as motivational factors for information seeking. In this context, such characterizations and definitions were compared by identifying similarities and differences between various studies. Finally, the identified categories were named according to the data they contained (Lincoln & Guba, 1985). This resulted in the identification of five major categories by which researchers have conceptualized emotions and feelings as motivators for information seeking. The findings reported below provide detailed examples of these categories.

To strengthen the focus of the study, attention was focused on investigations of information-seeking behavior, generally understood as a set of activities related to identifying, selecting, accessing, and encountering information sources of diverse kinds. Due to space restrictions alone, studies reviewing affective factors in the specific contexts of database searching and web searching were excluded; Lopatovska and Arapakis (2011) provide an excellent overview of such investigations. Second, affective phenomena such as library anxiety (Mellon, 1986) associated with the barriers of using particular channels such as university libraries are excluded from the discussion, as is analysis of the affective factors in the specific contexts of information need and information use (for these issues, see Dervin & Reinhard, 2007; Nahl, 2007b; Savolainen, 2011). Finally, the findings reported below do not provide a quantitative picture specifying the most frequent conceptualizations of the affective factors.

## **6. Findings**

The conceptual analysis revealed that researchers have approached the motivational aspects of emotions and feelings from five major viewpoints. They suggest that emotions and feelings motivate individuals to: (i) start, (ii) expand, (iii) limit, (iv) terminate, or (v) avoid information seeking. In the review of these categories, illustrative examples will be taken from empirical studies. Since the modes of (i) starting and (ii) expanding information seeking, as well as (iii) limiting and (iv) terminating information seeking tend to overlap and they can be separated only analytically, modes (i) and (ii) will be discussed together in section 6.1., while modes (iii) and (iv) will be reviewed together in section 6.2.

### *6.1. Starting and expanding the information-seeking process*

Both negatively and positively colored emotions and feelings can motivate the individual to start and expand the information-seeking process. So far, however, researchers have placed more emphasis on the motivational role of negative emotions or feelings.

Based on interviews with international doctoral students in LIS education, Mehra (2007) developed a model of affective dimensions and information-seeking activities. The model identifies eight phases describing how the students progressed in their studies. Phases 1 and 2 are particularly relevant from the perspective of motivational factors. At phase 1 (post-admission but before the first semester starts), important events in the student's life included preparation for the impending journey. Events such as these were appraised as stressful, giving rise to feelings of doubt, fear, and uncertainty in preparing to move to a new country and a new program of study. According to Mehra (2007), these emotions prompted the students to seek information through all available sources, local and global, electronic and face-to-face. Further, at phase 2 (program initiation), the students often faced situations making them uncertain about how well they had succeeded in their studies. Such events had a direct impact on their information seeking activities: the students reported

desperately contacting university and program administrators and faculty members to ensure that they were fulfilling necessary requirements for starting a doctoral program in a new country.

Viewed from the perspective of the appraisal theories, Mehra's study demonstrates how the appraisals of stressful events elicit negative emotions and feelings. They, in turn, result in action readiness, that is, a motivational state to start accessing an information source. However, the outcome of information seeking may give rise to further appraisals. In this case, the emotions elicited were object-instigated since they originate from the evaluation of an object, for example, the content of a document accessed by the individual (Frijda, 2010). Similar to the appraisal of events or situations, the evaluation of information sources may concern their novelty, intrinsic pleasantness or unpleasantness, goal relevance, and coping potential (Figure 1). If an information source is judged as outdated or otherwise inadequate, negative emotions such as frustration are elicited, resulting in readiness to expand the information-seeking process by accessing alternative sources. Mehra's (2007) findings suggest that a student may first consult a website and then continue information seeking by contacting a faculty member, for example.

However, the information-seeking process can also be prompted and expanded by positively colored feelings. Laplante and Downie (2011) examined music information seeking among younger adults. For example, visiting a music store appeared to be an event that was experienced as a pleasure in itself. The appraisal of such events elicited positive feelings like joy, giving rise to readiness to start and expand seeking information about products even though an individual would not have the intention to buy, at least in the short term. The strong motivational force of positive emotions or feelings was also revealed in Fulton's (2009) study focusing on information seeking among amateur genealogists. Engagement with the hobby in one's free time is an event giving rise to appraisals that elicited positive feelings such as the thrill of the chase for information. According to Fulton, such feelings were a primary motivation for starting the information seeking process. A pleasure principle accompanied the information seeking process, in which participants not only anticipated pleasure through involvement in genealogy, but also experienced further enjoyment as they expanded the information-seeking process by accessing additional sources. Fulton's findings support Isen's (2004) study in cognitive psychology, which showed that positive affect can evoke flexible and creative thought in problem solving. Positive feelings can also increase openness to information reception and greater levels of aspiration and exploration.

## 6.2. Limiting and terminating the information-seeking process

Emotions and feelings elicited by the appraisal can result in readiness to continue the information-seeking process but in ways that gradually limit the number of sources to be accessed, and finally terminate the information-seeking process. The conceptualizations analyzed in the present study indicate that emotions and feelings resulting in action readiness of these types tend to be negatively colored.

In the context of work-related information seeking, the constraining role of negative emotions and feelings has often been conceptualized in terms of *satisficing* — a portmanteau combining the words *satisfying* and *sufficing*, coined by Herbert Simon to describe a decision-making strategy that attempts to meet criteria for adequacy, rather than identify an optimal solution, especially when time is a critical variable (Prabha, Connaway, Olszewski, & Jenkins, 2007). The main question dealing with satisficing behaviors revolves around “what is enough” in information seeking. According to Prabha et al., there are diverse emotionally colored “stopping rules” that determine how satisficing is defined in practice. For example, the disgust rule allows the information seeking process to be terminated only when the user becomes disgusted by having to examine too many

irrelevant documents. In terms of the appraisal theories, the evaluation of additional sources available for the information seeker results in negative emotions such as aversion, leading to readiness to limit the seeking of additional sources.

Zach's (2005) study focusing on information-seeking behavior among senior arts administrators exemplifies such a preference well. The findings indicate that art administrators limit information seeking by drawing on the rationale of satisficing and finally stop looking for information when they feel comfortable that they can complete the task, even if they think that additional information may be available (Zach, 2005). The reference to "feeling comfortable" suggests that the emotions resulting in readiness to terminate the information seeking-process may also be positively colored.

Negative emotions and feelings may motivate people to limit information seeking in non-work contexts as well. Based on an empirical study, Lambert, Loisel, and Macdonald (2009) developed a typology depicting the major patterns of seeking health-related information among cancer patients. Receiving the diagnosis of cancer was reported as an event eliciting anxiety and fear. However, negative feelings did not always result in readiness to avoid information seeking. One of the patterns, guarded information seeking, manifested itself in the intentional limiting of the range of seeking cancer information and terminating the information seeking process in cases in which there is a risk of coming across undesirable cancer information. On the one hand, "not knowing is better" was the main thought expressed toward cancer information (Lambert et al., 2009). On the other hand, guarded information seeking was not totally driven by escapism and denial since such an activity is characterized by the juggling of fears and curiosity for information. Thus, guarded information seeking means that the information seeker limits the range of sources for the reasons of self-protection.

Similar findings were obtained in a study reviewing selective avoidance of health information among university students (Sairanen & Savolainen, 2010). The findings demonstrate that the individual starts seeking additional health information to meet a specific information need. However, the process was discontinued at a certain point because the text and pictures presented in the documents resulted in feelings of anxiety or fear.

### *6.3. Avoiding information seeking*

Finally, emotions and feelings may result in readiness not to start any information seeking process at all. Unsurprisingly, the affective factors resulting in the avoidance of information seeking tend to be negatively colored. It is also a characteristic of the conceptualizations of information avoidance that they are concentrated on non-work contexts such as health. Typically, the negative emotions giving rise to information avoidance are anxiety and fear. This is exemplified by Chatman's (1992) study focusing on elderly women living in a retirement residence. Chatman found, for example, that fear of exposure of needing outside assistance prevented elderly women from openly expressing their situations and seeking information. Risky situations giving rise to anxiety and fear were often related to discussion about health with fellow residents or family members. Elderly women were not engaging in information seeking because they wanted to give an appearance of normalcy and avoid the expulsion from the retirement residence on the basis of mental or physical failings. The end result was that many residents were desperately in need of health information but pretended they were successfully coping without it.

The study of health information avoidance among university students conducted by Sairanen and Savolainen (2010) also demonstrated the motivational power of negative emotions and feelings. Some of the participants preferred comprehensive avoidance of information: they refrained from

accessing any sources that may provide undesirable information about a health issue. The findings indicate that comprehensive avoidance concerned situations in which the individual came across undesirable sources of information, for example, physicians or health-related websites. Physicians were avoided because contacting them could involve the risk of getting a diagnosis of a serious allergy, for example. Interestingly, such appraisals were not solely based on the sense of intrinsic unpleasantness of an information source but also on the evaluation of the coping potential of the individual. In this regard, important questions include the extent to which the individual could live with the consequences of an event, for example, a diagnosis of a chronic illness. Comprehensive information avoidance also manifested itself in situations in which the participants were mentally preparing themselves for operation. To protect themselves, they indicated strong aversion to information sources reporting how the operations are carried out; in particular, they were unwilling to see photographs of medical operations.

## 7. Discussion

The main findings are summarized in Table 1.

### Modes of readiness to seek information

	<b>Start and expand information seeking</b>	<b>Limit and terminate information seeking</b>	<b>Avoid information seeking</b>
<b>Emotional valence (positive – negative)</b>	Positive and/or negative	Mainly negative	Negative
<b>Typical emotions or feelings</b>	Curiosity, interest, joy, optimism, thrill  Anxiety, confusion, doubt, uncertainty	Anxiety, aversion, disgust, frustration, satisfaction	Anxiety, aversion, fear, irritation
<b>Examples of empirical studies</b>	Laplante & Downie (2011)  Mehra (2007)  Fulton (2009)	Lambert et al. (2009)  Sairanen & Savolainen (2010)  Prabha et al. (2007)  Zach (2005)	Chatman (1992)  Sairanen & Savolainen (2010)

Table 1. The main features of emotions and feelings as motivators for information seeking

As Table 1 suggests, researchers have identified a variety of positively and negatively colored emotions and feelings that may motivate to information-seeking behavior. As a whole, the conceptualizations suggest the predominance of negatively colored emotions and feelings. A positive emotional valence is mainly associated with starting and expanding information seeking, even though it also may appear in the context of limiting and terminating information seeking if the individual is satisfied with the outcome. Some emotions, for example anxiety, may motivate in

multiple ways, ranging from starting information seeking to information avoidance, while other emotions such as joy are typically experienced while starting or expanding information seeking.

The findings specify the picture of the motivational roles presented by Dervin and Reinhard (2007), who assumed that emotions activate or inhibit information seeking. Of the above modes, starting and expanding information seeking comes closest to the idea that emotions activate information seeking, while inhibiting information seeking is closely related to the modes of terminating and avoiding information seeking. However, the characterization of the mode of limiting information seeking is less meaningful if it is viewed on the continuum of activating<-->inhibiting, because this mode mainly deals with keeping the information-seeking process in control in terms of satisficing. The modes of starting and expanding information seeking are parallel to the invitational mood defined by Kuhlthau (2004) and positive emotionality characterized by Heinström (2010). Further, the mode of limiting information seeking is comparable to the indicative mood defined by Kuhlthau (2004,) and to some extent, negative emotionality (Heinström, 2010).

The study also sought to address how researchers have characterized the motivational roles of positively and negatively colored emotions and feelings. The findings indicate that negative emotions such as anxiety occupy a central motivational role, independent of the mode of the action readiness. Negative emotions and feelings are instrumental in starting, expanding, limiting, terminating and avoiding information seeking across contexts, both work-related and non-work. The motivational role of negative emotions and feelings is particularly strong in the context of avoiding health-related information. In contrast, the motivational role of positively colored emotions and feelings is somewhat residual. In practice, such emotions only feature as motivators in hobby-related contexts in which feelings such as joy and thrill of finding something new are starting and expanding the information-seeking process.

The present study confirms the assumption of Dervin and Reinhard (2007) about the predominance of negatively colored emotions and feelings as motivators for information seeking. Further support for the central role of negative emotions can be found in Kuhlthau's (1991) ISP model, demonstrating that feelings of anxiety, frustration and uncertainty are common, particularly in the early stages of the information search process.

The evaluation of the novelty value of the above findings is rendered difficult by the paucity of comparable investigations. This reflects the minimal interest directed to the analysis of the affective factors within LIS so far. The findings also suggest that in LIS, the conceptualizations of the motivational aspects of emotions and feelings tend to operate on a general level. Most characterizations are descriptive and the categories of emotion or feeling are not specified in greater detail by drawing on ideas developed in other fields such as psychology. The lack of interdisciplinary approaches was also identified in studies focusing on emotions in the contexts of information retrieval and human-computer interaction (Lopatovska & Arapakis, 2011). Similarly, in a study focusing on the conceptualizations of the cognitive and affective attributes of the concepts of information need and uncertainty, Savolainen (2011) found that such characterizations have remained at a general level. All in all, the findings suggest that researchers examining the affective factors of information behavior would benefit from going beyond the domain of LIS.

## **8. Conclusion**

Affective factors are important constituents of human motivation. As the present study demonstrated, emotions and feelings can substantially encourage or discourage an individual's attempts to seek information. To further elaborate the picture of the motivational role of the

affective factors, both conceptual and empirical research are needed. Conceptual analysis could focus on the potential of existing models of information seeking and searching. For example, the comparison of Kuhlthau's ISP model and Nahl's social-biological information technology model may provide novel ideas about the ways in which affective factors trigger and drive information seeking. Another important topic for the application of conceptual studies is the relationship between cognitive and affective factors, since both Kuhlthau and Nahl have pioneered in this field. To deepen the conceptual picture, there is also a need to consider the motivational nature of affective phenomena of other types by including mood and affective style, for example. For these studies, ideas obtained from other fields such as personality psychology (e.g., Heinström, 2010) would be particularly important. Further, the picture of the role of emotions and feelings may be elaborated by drawing on the theories of emotions, for example, appraisal theories (Moors et al., 2013).

Second, it is important to conduct empirical investigations examining the motivational roles of the affective factors in information seeking and use, both in work-related and leisure contexts. Studies such as these may shed additional light on the issues of satisficing, for example (Prabha et al., 2007). Finally, since the affective phenomena tend to be intertwined with cognitive and situational factors, the picture of the motivational aspects of emotions, feelings, mood and affective styles can be deepened by looking at these factors together rather than separately. The elaboration of the affective factors matters because the research findings can deepen our understanding about why people in certain situations are willing to start, expand or terminate information seeking and why they sometimes choose not to access information even if it is available.

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