IRS, information services and LIS research – a reminder about affect and the affective paradigm… and a question

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Abstract

Purpose – A previous contribution (Fourie, 2013) argues in favour of a balance in emphasis between information communication technology (ICT); information retrieval systems (IRS) such as databases, library catalogues, repositories, Google Scholar, digital libraries, portals, search engines; and, the users of these systems. This contribution pursues the need to consider affect and an affective paradigm more prominently in the design, evaluation, promotion and use of IRS and library and information services (LIS).

Design/methodology/approach – The contribution is written against the background of research in information behaviour, user studies, systems design, and information literacy.

Findings – Although the literature from LIS and other disciplines notes an affective paradigm or even paradigms, it is not strongly positioned compared with the systems and cognitive paradigms. A growing body of research and work practices such as information representation and tagging, and information skills training, is taking a slant towards affect and emotion. The question, however, is whether current work is sufficient to argue for an affective paradigm complimentary to the systems, cognitive and socio-cognitive paradigms, and how an affective paradigm should be introduced in training/education for LIS.

Originality/value – Although there are a number of publications on affect and emotion, and references to an affective paradigm, this contribution is aimed at stimulating thought on whether we should prominently introduce the affective paradigm into LIS curricula as preparation for adding more value to IRS, library services, and in dealing with emotion-laden jobs, and if so, how.

Keywords – Information Communication Technology, information retrieval systems, information services, affect, emotion, affective paradigm, IRS, information behaviour

Paper type - Research

1 Introduction

In a previous contribution (Fourie, 2013) the need to find a balance and synergy between information communication technology (ICT); information retrieval systems (IRS) such as databases, library catalogues, repositories, Google Scholar, digital libraries, portals, search engines; and, the users of these systems, was suggested as depicted in Figure 1. One way of doing this is to reconsider the way IRS are designed and evaluated, and their use promoted and assessed. This reconsideration also applies to library services. Do we focus on what the system can offer, on the preferences of people, their knowledge… or on their feelings? Which views or paradigms are directing (or should be directing) our work?
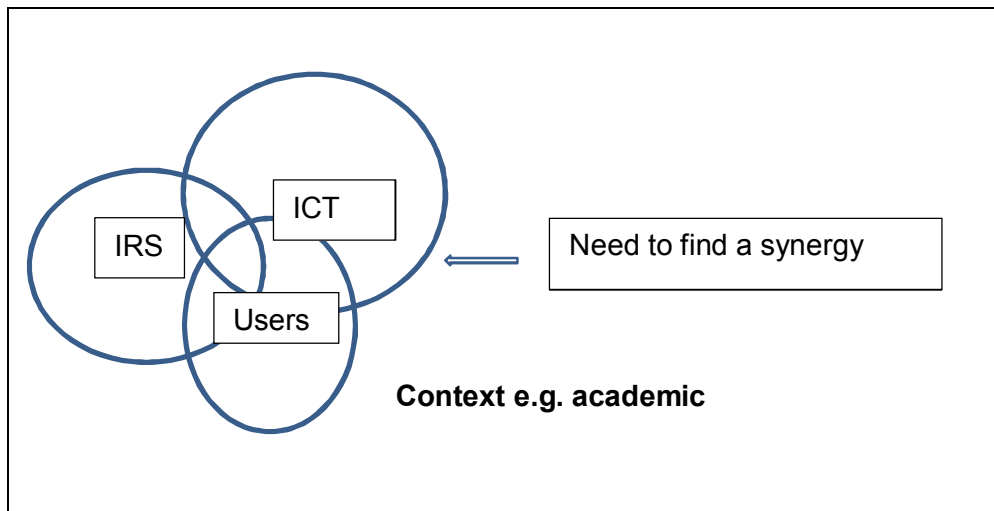
Figure 1: Finding a synergy between IRS, ICT and user groups in context

Traditionally IRS and LIS services were approached from the systems paradigm, as is clear from early database evaluation projects (Lancaster, 1991; Ingwersen and Järvelin, 2005). In the 1980s the individual user became more prominent. This is reflected in the work of Belkin, Oddy and Brooks (1982), Dervin and Nilan (1986) and later in the 1990s the work of Kuhlthau (1991, 1993). Prominent researchers such as Ellis (1992), Ingwersen (1992) and Ingwersen and Willit (1995) did much to promote the cognitive approach. The socio-cognitive approach is associated with the work of Hjørland (2002) and Jacob and Shaw (1998), amongst others. Reading discussions on these paradigms and arguments to promote the use of a specific paradigm, is very confusing and novices to the field can easily get the impression that paradigms in LIS research (with specific reference to IRS), are at opposite sides. Rather, we argue, they should complement and strengthen each other, and researchers should explore gaps that might be filled by additional research foci, such as affect and emotion, and other paradigms that have been noted but may yet not be well established. A holistic perspective is required (Fulton, 2009).

Each of the paradigms mentioned is important to deepen understanding of the IRS that stands between (potential) users and the collection of (potentially) useful information that can meet their needs for desired information (Harter, 1986, p. 245). They can all, and should all, play an essential role. In conducting research and choosing a paradigm to guide the research, emphasis is often on one paradigm only, depending on the background and comfort zone of the researcher(s). This does not, however, mean that researchers see value in one paradigm only. Very few researchers, unfortunately, have the ability to work in more than one paradigm at equal levels of proficiency. This is reflected in the lack of cohesion between research from the systems paradigm and evaluations of IRS, and studies of information behaviour research, where the latter places a stronger emphasis on the user, user experiences, motivation, and preferences. Although we can claim a deep understanding of IRS, users, technology and LIS services at present, there is much more to learn, and on-going developments and challenges to be faced. This is partly due to changes in the communities being served: serious researchers, students facing academic pressure and global competition, an increasing older population with increasing health problems, and also an increase in patients diagnosed with life-threatening diseases and pandemic diseases such as HIV/AIDS. At the same time, there is also a population with more time for leisure and pleasure (Fulton, 2009), and social interaction (Miller and Wallis, 2011), as well as for participation in making information accessible (Ercegovac, 2012). Fulton and Vondracek, (2009, p. 612) explain: "A variety of factors, including the rise of free time among baby boomers now retired or retiring, increased opportunities for budget travel with cheap fare

airlines, and rediscovery of leisure through the lens of other subject fields, have encouraged LIS researchers to explore this aspect of everyday information and social behaviors." Although emotion and affect have featured in the information behaviour and IRS literature over a number of years (Kuhlthau, 1991, 1993) researchers in these areas are increasing their attention to affect (Albright, 2010; Fulton, 2009; Julien and Genuis, 2009; Nahl and Bilal, 2007; Rioux, 2010; Schroeder and Cahoy, 2010; Veinot, 2010). The question, however, is should we approach attention to affect as a paradigm in its own right, and should LIS professionals be prepared for this expanded understanding, and if so how? These questions are the focus of this article.

Affect and emotion: terminology

Many words appear in the LIS literature that reflect affect and emotion: anxiety (including "library anxiety") (Kwon et al., 2007; Mellon, 1986), feelings (e.g. from the work of Kuhlthau, (1991, 1993), emotions (Tenopir, 1994), and motivation (Cahoy and Schroeder, 2012; Kalbach, 2006)). Such words are even more prominent in information behaviour studies conducted in related fields. Research on HIV/AIDS and information behaviour, for example, frequently mention words such as coping, stress, stigmatisation, fear, concern, and anxiety (Fourie and Julien, 2013; Veinot, 2010). These terms are also found in other health contexts, such as cancer and palliative care (Fourie, 2012). Studies related to health and information seeking stress the need for emotional support and the need for strong emotional ties to others (Veinot, 2010). In spite of a very strong presence of words reflecting affect and emotion, in-depth treatment of affect and emotion is scant. For example, Julien, Mckechnie, and Hart (2005) found that research in systems does not take account of affect, and even research in information behaviour has not increased its focus on emotional variables in the past decade (Julien et al., 2011). It seems as if researchers are dancing around emotion and affect. There is, however, also a shift to focus on positive affect as well. The importance of satisfaction and satisfying experiences (Moline, 2010), as well as pleasure, are also receiving increasing attention (Fulton, 2009; Fulton and Vondracek, 2009). Even in research on information behaviour and life-threatening diseases, entertainment, escaping and looking for pleasurable things are addressed (Reeves, 2001).

Where is affect and emotion of importance?

The role of affect has been well recognized in psychology, computing, education, cognitive science, and neuroscience – but less so in Library and Information Science. It has been noted in human computer interaction (Peter and Herbon, 2006). An understanding of affect is important to advance learning, information use, and technological adoption among various user groups. Fulton (2009) specifically notes the relevance of affect in the information behaviour of older adults. There are also many studies focusing on affect and youth (Bilal, 2005; Harding et al., 2009).

Affect, emotion and feelings are strongly associated with social cognition (Forgas, 2001; Forgas et al., 2006), and the information seeking process (Kuhlthau, 1991, 1993). Affect features in libraries' social responsibilities and calls for librarians to remain sensitive to accept expanding professional roles with affective components, and to portray such sensitivity and care in lobbying for meeting the needs of minorities and respecting their human rights. Nwezeh (2010, p. 161) argues that "Librarians, information specialists, counsellors, and health workers must emphasize respect, love, care, and support for those infected and affected by HIV/AIDS. Also they should ensure the protection and promotion of human rights of people living with HIV/AIDS and people affected by HIV/AIDS." Affective competencies are important in information literacy and central to student mastery of research skills (Schroeder and Cahoy, 2010). Affect also features strongly in much of the work by Veinot on HIV/AIDS. Affect is at stake in the complex dynamics that make

individual acts of interpersonal information acquisition and sharing possible (Veinot, 2010). According to Urquhart and Yeoman (2010), in a study on the information behaviour of women and theoretical perspectives on gender, gender-ascribed constructs, such as concern for others, not gender alone, are likely to be important variables in information behaviour. Affect is also underlying the work of Rioux (2010) on social justice in LIS.

Klentzin (2010) notes the affective domain and value in examining student attitudes towards research. Students were asked: "Do you like research? Why or why not?" Results were contextualized through the lens of Krathwohl, Bloom, and Masia's Affective Domain. The results of this study can enable librarians to understand the attitudes freshmen students "carry" with them regarding the value of secondary research, but also to consciously incorporate affective components into their work in order to craft more impactful library sessions. Julien and Genuis (2009) note that library staff are experiencing increased work role complexity as they move from being service providers towards greater instructional roles. In order to deepen understanding of how library staff relate to their instructional roles and the implications of those self-understandings for instructional outcomes, they explore the emotional labour in librarians' instructional work. They recommend that individuals and organizations will benefit from considering the influence of affect on library staff: "Those who educate librarians should seek to improve understanding of affect and its impact on instruction; organizations will benefit from addressing the emotional labour performed as a part of the teaching role" (Julien and Genuis, 2009). There are many more examples of how affect and emotion are prominently featuring in contemporary LIS research (Carrillo-de-Albornoz and Plaza, 2013; Julien and Fourie, 2013; Julien and Given, 2013; Klentzin, 2010; Kwon *et al*., 2013; Mavridou *et al*., 2013).

Can we refer to an affective paradigm or are we not yet there?

Paradigms are described by Kuhn (1996) in *The structure of scientific revolutions* - a prominently cited work in IRS literature regarding paradigms (Ingwersen, 1992). According to Kuhn a paradigm is "universally recognised scientific achievements that for a time provides model problems and solutions for a community of researchers" (Kuhn, 1996, p. 179). According to Saracevic (1987, cited in Ingwersen, 1992, p. 57) "[The work] by a whole group of scholars is not only a description and a suggestion of a particular model – but even more so – a statement of a paradigm of an emerging and desired direction for research… Of course, time will show if this new paradigm [cognitive paradigm] will lead to success." This statement could now also apply to the affective paradigm, which might perhaps still be a pre-paradigm.

A recent landmark monograph, *Information and emotion: the emergent affective paradigm in information behaviour research and theory* (Nahl and Bilal, 2007), argues strongly for an affective paradigm, and brings many issues of affect and emotion to the front, including affect and the evaluation of information sources, children's information behaviour and systems design, affect and critical care, affect and undergraduates' information behaviour, critical thinking and library anxiety, and emotions in the information seeking of blind people. In the introduction of *Information and emotion*… Nahl explains: "The purpose of this book is to establish a focus on affective and emotional dimensions in information behaviour (IB) research, based upon recent theoretical developments and research findings in information science and the cognate fields of cognitive science, psychology, business, education, ethnomethodology, communication, neuroscience, and computer science. The affective paradigm established in this book traces its origins to early work in education and cognitive science" (Nahl and Bilal, 2007, p. xvii). "This book tackles the important role that emotions play in our interaction with information systems. Until now that domain has been neglected in information behaviour research, leaving a gap in our full understanding of information interaction (Carol Tenopir – cover page of book). Nathan Shedroff (on the book jacket) comments that it "Sheds valuable light on what will become the most significant direction in

human research and understanding for the coming decades – in science as well as business." *Information and emotion*… was widely hailed in the library and information science (LIS) and even indexer communities (Lennie, 2008). Bruce (2008, p. 480), described it as a "deeply interesting read for anyone who would like to put aside the view that information is objective and measurable, collectible and 'arrangeable', and consider its influence on people and on our affective responses."

In the LIS field Albright (2010), Bilal (2005) and Nahl and Bilal (2007), amongst others, prominently refer to the affective paradigm. Even in her early publications Nahl (one of the key campaigners for an affective paradigm in LIS) stresses affect (e.g. Nahl, 1998; Nahl and Tenopir, 1996). Other calls for considering affect can be noted in the LIS literature. Cahoy and Schroeder (2012) argue for embedding affective learning outcomes in library instruction. Pinto (2011) also aligns affect and emotion to information literacy. A concern for affect is implied by Chandrashekar (2010) in an article on using adaptive technology to support users who are blind or visually impaired. Hyldegård (2009) reports on affect and group information seeking. Affect is important in co-design (Guha *et al.*, 2013), as well as electronic communication (e.g. the impact of flaming) (Alonzo and Aiken, 2004). Arnone, Reynolds, and Marshall (2009) report on the value of affect in terms of valuing information and information skills. Bilal (2005), in a study on children's information seeking and the design of digital interfaces in the affective paradigm, notes that research reveals that affect imparts directionality to cognition, which in turn influences actions. Miller and Wallis (2011), using relational agency theory, report on the education of information professionals empathic to social interaction between information professionals and their clients. They also stress the growing need for understanding of the affective paradigm in the information and knowledge professions.

In a discussion of multi-disciplinarity in information behaviour, Albright (2010) explains "Library and Information Science (LIS) has arrived at a crucial juncture in its relatively brief theoretical history. In addition to the cognitive and physical perspectives in our study of information, a new paradigm has been suggested; the affective paradigm. This new perspective offers keys to unlocking questions about the nature of the interaction of human and information." The term "affective paradigm" is, however, not new (Polcari, 1979). Apart from LIS it has also been noted and its relevance argued in many other fields, such as the health sciences, particularly regarding depression (Gunning and Smith, 2011), and neurobiology (Arnsten and Rubia, 2012); in organizational emotional intelligence (Adams, 2011); and, human computer interaction. Bamidis *et al.* (2007) report on multi-channel physiological sensing of human emotion in the context of human computer interaction, where a computer responds based on the emotional context of the user and the situation. In the field of neuroevolution, Whitfield (2009) also refers to the affective paradigm, deriving three affective theories from the neuroevolutionary perspective to explain 'delight'. Kovaliov (1987) notes three psychological paradigms: transactive vs hypodermic, active vs reactive, and procedural vs affective. Wager *et al.* (2003) uses the affective paradigm in a study on emotional valence (positive vs. negative and approach vs. withdrawal), gender, and lateralization of functional brain anatomy in emotion.

The question arises: does the growing body of literature on affect and emotion in Information Science, and specifically IRS justify a claim for an "affective paradigm", and what are the implications for theory and practice, and the education of LIS professionals and researchers? Before addressing the question, a few other issues will be considered.

Methods, theories and tools to explore the status quo

From the methods and theories reported in relation to affect and the affective paradigm, the following is worth noting. Davis (2011) reports on a computer-aided affective content

analysis of nanotechnology, which can be a useful addition to thematic content analysis to note changes in affective tone. Davis (2011) used the *Whissell's Dictionary of Affect in Language* while Mavridou *et al.* (2013) report on mining affective needs for building a mass-customization recommender system. In a recent conference paper, Julien and Given (2013) note the potential of the Geneva Emotion Wheel (http://www.affective-sciences.org/gew) for identifying terms relating to affect. Theories such as radical change theory (Dresang and Koh, 2009) have also been reported for the study of affect and emotion in LIS. Further exploration is, however, required.

IRS, information services and LIS research – and affect

Considering the work that has been reported on affect and emotion in LIS research, as well as increasing reference to an "affective paradigm" in the LIS literature and in other disciplines, it might be useful to consider where and how a focus on affect and emotion can make a difference. Some suggestions are reflected in Figure 2.
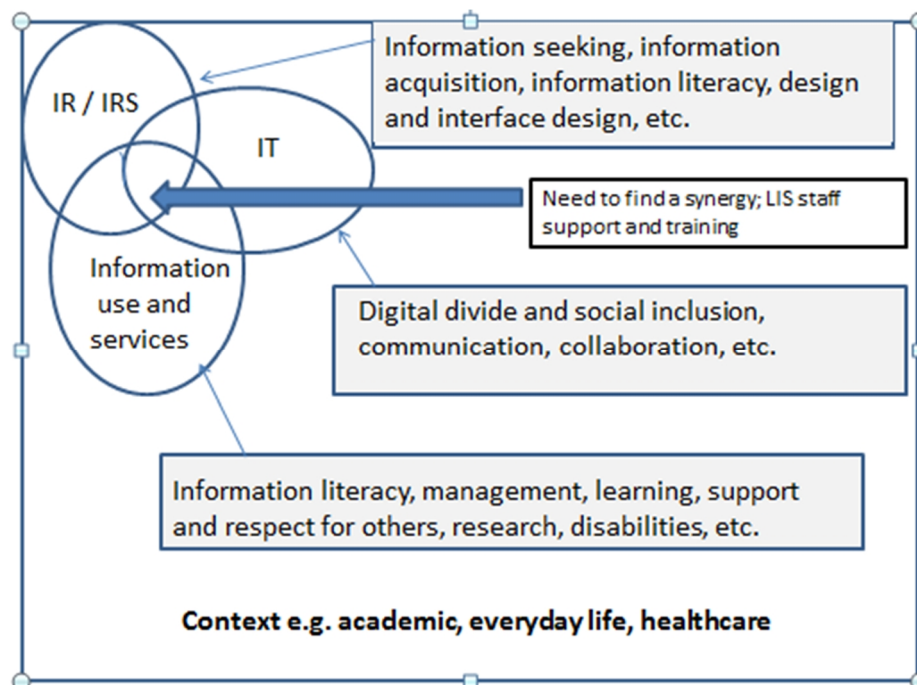

Figure 2: Finding a synergy between IRS, IT and users – some help from affect and emotion

Do we accept an affective paradigm and include it in LIS curricula?

Although certainly not nearly as strongly positioned as the systems paradigm, there are many pointers towards an emerging affective paradigm, in LIS as well as in other disciplines. It might thus be timely to introduce the affective paradigm more prominently in LIS curricula as complimentary to others such as the systems, cognitive and socio-cognitive paradigms. As noted by Julien and Genuis (2009) those educating librarians should seek to improve understanding of affect and its relevance to information practices and information services. This should be done in relation to a variety of contexts, ranging from libraries and academic institutions, to emotionally-laden contexts such as life-threatening diseases.

Only a few suggestions on introducing the affective paradigm into LIS curricula are noted here, with the intention to stimulate interest in further debate. LIS professionals should be

- sensitized towards the relevance of affect in all contexts ranging from academic contexts, everyday-life, and especially healthcare contexts. In some contexts affect and emotion will feature more prominently than cognitive variables.
- sensitized to note and observe affect in the subject literature (informally or through content analysis), through observing body-language and facial expressions, formally through interviews and discussions, and especially by developing a sensitivity to people's choice of words.
- sensitized to the emotionally-laden nature of their work (Julien and Genuis, 2009; Matteson and Miller, 2012).
- encouraged to develop their own emotional intelligence and to recognise the importance of inner-awareness and self-reflection with special reference to affect.
- alerted to the fact that negative emotions such as anxiety and fear, but also joy, happiness and motivation, feature very widely in LIS and IRS related work and also information behaviour. There are also transitional emotions at stake.
- introduced to research lenses and methods appropriate to studies of affect and emotion, as well as the value of turning to other disciplines in finding appropriate lenses and methods.
- encouraged to involve users/clients in incorporating affect in the design of IRS and information representation, e.g. by means of tagging as well as in co-design that might result in more appropriate user-interfaces that take affect into account.

Conclusion

Although still very much an emerging paradigm, there seems to be ample reason to explore affect and emotion at greater length in the LIS environment, studies of information behaviour and information practice, and the training of LIS professionals. Cross-disciplinary collaboration and a dedicated conference on the evolvement of an affective paradigm, appropriate methods of research, and supporting educational LIS practices might offer some first steps to stimulate interest and awareness.

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