
Information Behaviour: an Inter-disciplinary Perspective

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INTRODUCTION

Information behaviour has interested information scientists for more than 40 years, although the early work was more concerned with library use, as one form of such behaviour, than with any generalised, theoretical concept. Over the past 30 years, however, there has been increasing interest in general models, from the early work of Paisley (1968) and Allen (1969), which set out models of the influences that affect the behaviour of information seekers.

The terms used by researchers have varied over the years, from "library surveys" to "user needs" and "information-seeking behaviour". However, having at least popularised (if not introduced) the latter term in a paper in 1981, I now feel that the term "information behaviour" is more appropriate, since other behaviours, in addition to seeking, can be embraced.

A general model of information behaviour needs to embrace at least the following three elements:

- information need and its drivers, i.e., the factors that give rise to an individual's perception of need;
- the factors that affect the individual's response to the perception of need; and
- the processes or actions involved in that response.

The model Wilson introduced in 1981 covered aspects of the first two of these elements and, hence, was incomplete as a model of information behaviour in general. However, the key elements in that model proved useful in drawing attention to the fact that the basis for information-seeking, or the causes of information need, could be not only cognitive, but also affective, that is, could have an emotional component, or physiological – as when hunger drives us to a restaurant guide! The model also drew attention to the complexity of the context of information-seeking behaviour, showing that the individual was likely to be affected by personal psychological factors, interpersonal relationships, formal organizational relationships, and more general environmental factors.

This paper seeks to elaborate that earlier model of information-seeking behaviour and develop a more general model by reference to work on information behaviour that has been undertaken in a variety of fields outside of

information science and which, because of the fragmentation of knowledge into specialisms, is rarely considered by information scientists.

CHARACTER OF INFORMATION NEED

As noted above, Wilson's 1981 paper developed the concept of an affective and a physiological as well as a cognitive basis for perceiving a need for information. This accords with Morgan & King's (1971) general analysis of need, which proposes that needs emerge from three kinds of motives: physiological motives, "unlearned" motives (including curiosity and sensory stimulation) and social motives. McQuail (1972) enlarges upon affective and social needs into those that gratify escapism or emotional release (diversion), those that gratify companionship and social utility needs (personal relationships) and those that support personal identity through comparison with life, exploration of reality and the reinforcement of values. One can readily imagine the circumstances under which a search for information will become a necessary part of fulfilling these needs.

However, we can also characterise information needs in a more pragmatic way, as Weights, et al (1993) have done in identifying:

- a need for new information,
- a need to elucidate the information already held, and
- a need to confirm information already held.

Such a pragmatic classification may be more useful in enabling an information provider (or an information retrieval system) to identify what is needed by an enquirer. But, as this classification directs attention to essentially cognitive needs, we need recognize the role of beliefs and values by enlarging it by adding:

- a need to elucidate beliefs and values held, and
- a need to confirm beliefs and values held.

Needs are also expressed through the kind of questions that people ask, which Carter (reported in Chew, 1994) has categorised as:

- seeking to discover what is happening, which can be called a need for *orientation*;
- seeking to check that the person is on the right track – which can be called *reorientation*; and
- seeking to form an opinion or solve a problem – which can be called *construction*.

To these we can add, seeking to build upon existing knowledge – which, by analogy to construction, might be called *extension*.

Again, this kind of categorisation, if built into either human or machine information systems, might be useful in establishing the basis for searching for answers.

STRESS AND COPING: THE LINK BETWEEN NEEDS AND ACTION

While an analysis of the bases of needs for information may be of some use, it is nevertheless the case that not all needs result in any actions to satisfy them and why people choose to act or not to act is not generally well understood. In effect, Dervin's sense-making theory sets out a general motivation for information-seeking behaviour, in that all information-seeking may be seen as arising out of a motivation to make sense of the world around us, either in general, or in some specific respect. Again, however, not everyone seems to need to make sense of all situations – or perhaps we should say that we are all happy some of the time not to make sense of the situation.

What is it, in other words, that motivates us to make sense of the world? One possible answer lies in the idea of stress and coping.

Stress is defined as:

...a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering his or her well-being. (Folkman, 1984)

and coping as:

...cognitive and behavioural effects to master, reduce or tolerate the internal and external demands that are created by stressful situations. (Folkman & Lazarus, 1985)

Clearly, to apply the idea of stress generally as a motivation for information-seeking behaviour, we need to conceive of "endangering...well-being" in very broad terms and it may amount, in specific instances, to no more than slight uncertainty or dissatisfaction. However, if we accept this, then a very persuasive idea is that some people fail to act upon a perceived need for information because the level of "stress" they experience is not sufficient motivation for searching.

Folkman (1984) also notes that coping may be emotion-focused or problem-focused, and Kleiber et al (1995) suggest that problem-focused coping is used when the situation is perceived to be changeable and, hence, consists of attempts to change it, whereas emotion-focused coping is involved when the situation is not perceived as amenable to change and consists of attempts to alter the person's perception of his or her relationship with the situation. In some studies (for example, van Zuuren & Wolfs, 1991) information seeking is equated with "monitoring" a situation and, perhaps not surprisingly, they find that monitoring correlates highly with problem-focused coping.

HEALTH INFORMATION BEHAVIOUR

The most extensive use of the concepts of affective needs and stress/coping theory are to be found in the literature of health information behaviour, which has long been the province of a number of disciplines apart from information science.

Thus, Johnson & Meischke (1991a) note that:

In terms of cancer-information seeking, the individual's need for... information can either consist of cognitive needs (obtaining more factual information about cancer prevention, detection, and/or treatment) or affective needs (obtaining information which will aid in dealing with cancer emotionally).

Stress/coping theory has also been widely applied in health information studies, with two cognitive states being proposed as central to understanding an individual's response to an adverse situation. As set out by Krohne (1993) these are: attention or orientation towards the threat (which is called vigilance, sensitisation, and monitoring by Miller & Mangan, 1983) and avoidance, or turning attention away from the threat (which is called repression or blunting by Miller & Mangan).

Thus, attention and avoidance are psychological traits of the individual that predispose the person towards searching for more information in a stressful situation, or towards avoiding information acquisition. In effect, whatever the level of stress, some people will respond by attempting to ignore the situation and, therefore, will not engage in information-seeking behaviour. Even those who do seek information, however, may experience barriers of other kinds as Wilson (1981) suggested.

BARRIERS TO SEEKING INFORMATION

Wilson (1981) postulated that the factors that give rise to a perception of information need would also act as sources of experienced barriers to information-seeking behaviour: thus, just as personal, organizational or inter-personal, and environmental circumstances would result in information needs arising, so these factors would present barriers of various kinds to information seeking.

This analysis is borne out by our review of the literature in areas other than information science, which generally confirms that the following categories of barriers to information seeking can be defined:

- Personal characteristics
- Social/interpersonal
- Environmental or situational
- Source credibility

PERSONAL CHARACTERISTICS

Personality characteristics appear generally to have been shunned by information scientists as explanatory variables in information-seeking behaviour, but other disciplines are less suspicious of their value. The principal psychological characteristic that appears in one guise or another is the concept of cognitive dissonance. Proposed originally by Festinger (1957), this suggests that conflicting cognitions make people uncomfortable (or, if you wish, cause a degree of

stress). One of the ways stress may be reduced is by seeking information either to support existing views or to give sufficient cause to change those views. Another reaction, of course, is to ignore the dissonance and to cope by rejection. Thus, the idea of cognitive dissonance becomes linked to that of *attention* and *avoidance*.

Aaker, et al. (1992), in their work on the effects of advertising, note that where an advertisement matches the belief held by a person, that person is more likely to advance supporting arguments for choosing a product. However, where there are discrepancies between the beliefs and the advertisement, the person is more likely to bring forward counter-arguments to those presented. Rogers's (1983) work is also relevant here: he suggests that:

Individuals generally tend to expose themselves to ideas that are in accordance with their interests, needs or existing attitudes. We consciously or unconsciously avoid messages that are in conflict with our predispositions.

Educational level has been explored in a number of fields: for example, in health information, Kassulke, et al. (1993) found that educational level was associated with risky behaviour in relation to cigarette smoking and excessive alcohol consumption and, in the field of consumer behaviour, Ippolito & Mathios (1990) show that those with higher educational levels were more likely to incorporate information about the benefits of fibre consumption. Ippolito et al. (1979) had also shown that college graduates were more likely to give up smoking, and Schucker et al. (1983) found a relation between level of education and reactions to warnings about saccharin in softdrinks.

Finally, among the various personal characteristics, the individual's economic situation is also likely to affect information behaviour. The key piece of economic research is that of Stigler (1961), who suggested that, since no consumer will know all of the prices in the market, a search for information on the most favourable price will be necessary. Stigler noted that the cost of the search will not be the same for everyone, since its chief component is time and the cost of time is higher for people with higher incomes.

However, Jacoby et al. (1978) report studies that find evidence of a negative or zero relationship between wages and search effort on prices, suggesting that other factors may intervene – for example, a search for alternative prices in the market may be combined with what is perceived to be an enjoyable family outing.

Stigler's proposition that, when choice alternatives are similar, search efforts will be reduced as the gains to be made are reduced is at variance with uncertainty theory, which predicts that, when choice alternatives are similar, search effort will increase in an effort to reduce uncertainty. (Urbany, et al., 1989). Clearly, there is scope here for determining whether economic or other factors dominate people's search behaviour.

SOCIAL AND INTERPERSONAL BARRIERS

Social and interpersonal barriers to information seeking may emerge at any time, since we are social beings who function in organizations and society through interpersonal communication. Thus, for example, Borgers et al. (1993), found that cancer patients identified the attitude of the specialist and the presence of other people, such as clinical assistants, as barriers to successful information seeking. Rogers (1983) noted that established behaviour may act as a barrier to change and, hence, as a barrier to information seeking towards change.

Social factors may also act as barriers to access and so frustrate the information seeker. Thus, Howze & Redman (1992) showed how resistance by interest groups prevented the diffusion of information on the impact of smoking on health, thereby effectively preventing individuals from gaining access to the information. Sheen (1992) notes that some scientists effectively draw a boundary around their expertise to protect their status in the organization: they gather information, but do not share it. This kind of behaviour, of course, is common in all kinds of organizations.

ENVIRONMENTAL OR SITUATIONAL BARRIERS

Research in a variety of fields shows that the immediate situation of information-seeking activity can include elements that represent barriers to continuing that activity and that the wider environment can also present problems. Time does not allow a detailed treatment of these factors, but three variables are worth noting:

TIME

Cameron, et al., (1994) found that information exchange between patients and doctors was inhibited by the lack of time available and Borgers et al., (1993) found that the duration of the consultation and interruptions such as telephone calls were barriers.

GEOGRAPHY

Connell & Crawford (1988) found that age and geographic location affected the health information received, with, perhaps surprisingly, elderly rural inhabitants receiving more than those living in urban areas.

NATIONAL CULTURES

The main work in this area is that of Hofstede (1980), who identified five dimensions in cultures. Some of these dimensions have clear significance for information behaviour (although Hofstede did not discuss the issue). For example, power distance is defined as the extent to which the unequal distribution of power in organizations is accepted in the society. One can

hypothesise that, in countries with high power distance measures, the exchange of information in that society is likely to be inhibited, whereas in countries with low power distance, it is likely to be aided. Another dimension is uncertainty avoidance, which is the extent to which a society feels threatened by uncertain situations (and which we have already come across in the psychological literature): again, we can hypothesise that, in countries with high uncertainty avoidance measures, information-seeking behaviour is likely to be fostered.

INFORMATION SOURCE CHARACTERISTICS

Two aspects of information sources have been studied in the literature outside of information science: accessibility, and credibility.

Clearly, without means of access to sources of information, information-seeking behaviour is likely to be frustrated or not even contemplated. Equally clearly, accessibility is likely to be viewed differently by different groups. This proposition is borne out by a study from the health information field, where Phillips & Zorn (1994) found that more than two-thirds of consumers of health services viewed access to health information as a problem, compared to less than half of the physicians surveyed. A general study of perceived problems in access to information could prove particularly interesting in revealing the extent to which such access is perceived to be stratified according to expertise or ability to pay.

The credibility of an information source may be measured by a number of things: its ability to deliver accurate, up-to-date and timely information, or its quality, or its delivery from a trusted source. This is a topic of considerable interest to consumer research, since advertisers must persuade consumers to believe their claims for products and services. In this area, the distinction between publicity and advertising is an interesting one: Kotler (1991) notes that publicity has higher credibility than advertising, since the connection between the manufacturer and the publicity is not so directly perceived. Lord & Putrevu (1993), reviewing the literature on this topic, note:

Publicity... delivers information to the consumer as part of 'the news' - a forum upon which consumers are socialized to depend as an accurate, objective and generally sufficient source of information. Whereas the perceived role of an advertiser is to sell his/her product, that of a journalist is to report the facts. Hence a consumer exposed to marketing information conveyed as part of such news, feature or editorial coverage is unlikely to suspect or search for an ulterior motive on the part of the source or presenter, assuming the message to partake of the same level of credibility associated with other journalistic reports.

These findings suggest that consumers indeed need to be careful that the 'news' is not, in fact, being manipulated by the advertiser!

RISK, REWARD AND SELF-EFFICACY

Assuming that whatever barriers to information seeking there may be are overcome, there remains a further decision on whether or not to engage in an active search. Stigler's (1961) prediction that when choice alternatives are similar, search efforts will be reduced as the gains to be made are reduced, is, in effect, a formulation of the risk and reward model. This model or theory states that decisions to act will be influenced by the risks and rewards involved in acting or not acting. If the rewards of acting are higher than the risks, then action will take place, if not, not. Risk is usually measured in terms of costs, but alternative formulations of risk have been proposed: for example, Settle & Alreck (1989), working in the field of consumer research, suggest that risk has five components—the risk of a product failing to perform to an accepted standard; the affordability of the product; the risk that the product may be hazardous; the risk associated with desire to impress friends or colleagues; and the risk to personal esteem. Murray (1991) adds time/convenience loss risks to these five.

Aaker, et al., (1992), supporting Stigler, suggest that active search occurs when the risk or uncertainty associated with a product is high, as in the case of a major purchase or purchase of an innovative product. However, the work on uncertainty cited earlier suggests that the ability to tolerate uncertainty may vary from individual to individual and the phenomenon of 'impulse buying' suggests that people may not always weigh up the risks very carefully.

Handling uncertainty may also be associated with self-efficacy, that is, the sense of personal mastery, which is a central concept of social learning theory (Rosenstock, et al., 1988). Bandura (1977) defines an 'efficacy expectation' as:

... the conviction that one can successfully execute the behavior required to produce the outcomes.

The distinction between efficacy and outcome is important, since a person may believe that a particular outcome from an action will be beneficial, but may feel unable to perform the action sufficiently well to ensure the outcome.

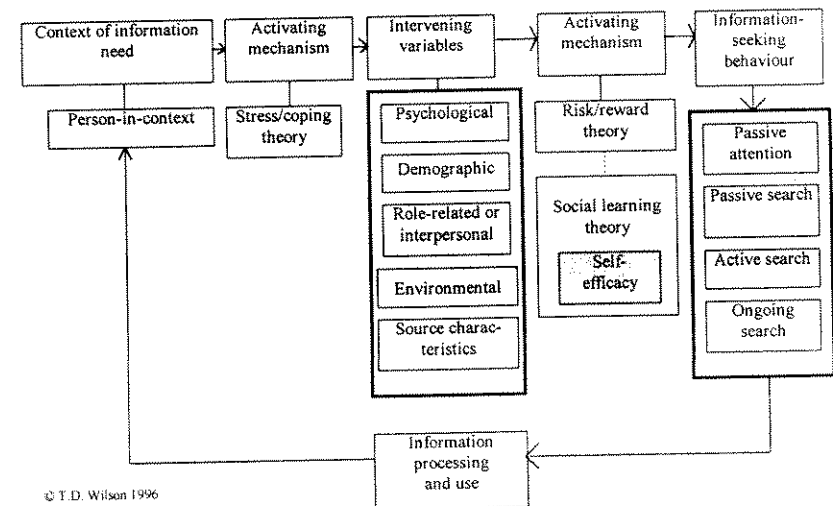
One can see in this set of ideas a chain of reasoning, probably not articulated by any individual, in which the risks and rewards of action are assessed (in whatever terms are appropriate in the situation), and then the individual determines whether or not he or she can carry out the action to achieve the desired outcome. Thus, we might envisage an individual who determines that he or she needs information, assesses the rewards as being worth any risk, and yet fails to act through a lack of conviction that a search can be carried through effectively to achieve the desired outcome.

A REVISED GENERAL MODEL

This review suggests that Wilson's (1981) model of information-seeking behaviour should be revised to cover information behaviour generally and to take account of the theoretical ideas derived from fields outside information science.

The following diagram sets out such a model:

FIGURE 1
A revised general model of information behaviour



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Most of the elements in the model have been the subject of this paper, and further details are to be found in the full report on the review (Wilson & Walsh, 1996).

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