

Paper: Influence of need for cognition and need for cognitive closure on information behaviour

Abstract: This project examines the influence of need for cognition and need for cognitive closure on information behaviour. Clear links between variations in the two variables observed in the literature and aspects of information behaviour are presented, along with a mixed methods design for the project.

Résumé : Ce projet examine l'influence du besoin cognitif et du besoin d'une finalité cognitive sur le comportement informationnel. Sont présentés des liens clairs entre les variations pour les deux variables observées dans la littérature et les aspects du comportement informationnel, ainsi que la conception de la méthodologie mixte du projet.

1. Introduction

Individuals differ in the ways in which they interact with information, and research on information behaviour (IB) has demonstrated that these variations can be examined through various lenses. Multifaceted models encompassing affective, cognitive and contextual dimensions are necessary to fully understand the complexity of human IB, as behaviour is essentially a function that depends on both the person and the environment (Lewin 1936, 12). In this respect, this project seeks to understand the effect on IB of two psychological theories of cognitive styles: need for cognition and need for cognitive closure. These two factors, while being closely related, remains intrinsically different.

In this paper, the two factors and their influence on IB are first presented. In this respect, key elements drawn from the psychology literature are linked with IB notions studied in library and information science (LIS). A preliminary methodology for this project is then suggested.

2. Individual differences and information behaviour

There is general agreement that individual differences influence information seeking and use, even though there are very few empirical explorations of their effect. Individual differences can be studied from the macro-perspective of personality or at the micro-level of a specific trait. Contemporary trait theory considers the five-factor model of personality (i.e. extraversion, agreeableness, conscientiousness, neuroticism and openness) to have a robust predictive value across a wide range of behaviours (Digman 1990; Golberg 1981, 1993; McCrae and Costa, 1987). Heinström (2005), who examined the influence of these personality factors on information-seeking style, used the results of a standard five-factor personality assessment (NEO Five-Factor Inventory, Costa and McCrae 1985) to predict various aspects of IB. Her results demonstrated that levels of neuroticism, openness to experience and agreeableness have significant effects on some

aspects of IB, including critical information judgement, information choice criteria, effort used, thoroughness in information seeking and information sources used.

The five-factor model can explain gross variations in information behaviour, but can miss more subtle influences. Other personality traits also influence how individuals define their information needs, how they seek for information or how they use it. One factor that is of obvious relevance to IB is the Miller's (1987) monitoring and blunting coping styles. Baker (1996) examined its influence on the general orientation to information during periods of acute stress. According to Miller's (1987) theoretical framework, "monitors" actively seek information to cope with a stressful situation, while "blunters" avoid information in an effort to distance themselves from the stress-provoking situation. Baker's (1996) results confirmed this prediction. Two other stable traits with potential implications for IB are the need for cognition (Cacioppo and Petty 1982) and the need for cognitive closure (Kruglanski 1989).

3. Need for cognition and information behaviour

Need for cognition is defined as the tendency to enjoy and engage in cognitive efforts (Cacioppo and Petty 1982). It varies along a bipolar continuum, with low need for cognition indicating the relative absence of the motivation for effortful cognitive activities. An individual with high need for cognition receives satisfaction from thinking, whereas an individual with low need for cognition perceives thinking as a chore in which he or she engages only when some incentive is present (Cacioppo et al. 1996, 198–199). Differences in need for cognition are intrinsically motivational and not a question of intelligence (see Howe et al. 1993; Cacioppo and Berntson 1994).

Research in psychology has demonstrated clear links between variations in need for cognition and some aspects of IB studied in LIS, especially with information seeking patterns. Individuals with a high need for cognition are more likely to engage in information seeking activities than are individuals with a low need for cognition (see Cacioppo et al. 1996, 239–242). It remains unclear, however, whether this variation is linked to more frequent recognition of problematic situations by individuals with a high need for cognition, by decisions to ignore information needs by individuals with low need for cognition, or both. Secondly, individuals with higher need for cognition generate more thoughts and engage more in metacognition (Petty et al. 2009; Petty et al. 2007), activities that could be linked to the number of information needs generated in a problematic situation. Thirdly, an individual with a higher need for cognition seeks more information, evaluates more thoroughly the quality of the information found, is more likely to rely on all of the pertinent information (as opposed to relying on simple cues) and uses a wider variety of information sources, including sources that were previously unknown (Cacioppo et al. 1996, 239; Petty et al. 2009). Everyone uses his or her intuition, images and emotions as information sources or in judging information sources. Individuals with a high need for cognition, however, do this in more thoughtful ways (Petty et al. 2009, 320). Lastly, individuals with different levels of need for cognition use information differently. Simple messages, for instance, tend to be more accepted by individuals with a low need for cognition, but rejected by individuals with a high need for cognition, and the opposite holds true for more complex messages (e.g. Bakker 1999; Williams-Piehota et al. 2003; Wheeler et al. 2005). For individuals with a high need for cognition, information tends also to be an important motivation for behavioural changes (Petty et al. 2009, 325).

4. Need for cognitive closure and information behaviour

Need for cognitive closure, in contrast, is defined by a desire for unambiguous information over uncertain or ambiguous information (Kruglanski 1989). It is conceptualized as a criterion that brings one to stop one's epistemic process and to form a judgment. It differs among individuals: some people may form a definitive opinion based on limited information while others may always resist making up their mind, no matter the amount of evidence at hand (Kruglanski and Fishman 2009, 343–344). The motivation towards closure varies along a bipolar continuum, anchored at one end with a high need for cognitive closure and a need to avoid closure at the other end (Webster and Kruglanski 1994, 1049). Individuals with a high need for cognitive closure see uncertainty as aversive, which translates into two behavioural tendencies. First, individuals with a high need for cognitive closure want to quickly terminate a state in which they feel uncertain (urgency tendency). Second, they want to keep it from recurring (permanence tendency) by relying on past knowledge and avoiding new information (Kruglanski and Fishman 2009, 345). These two tendencies have different implications for behaviours across many domains, including interactions with information.

Information seeking is one aspect of information behaviour that is clearly related to variations in need for cognitive closure. Research has demonstrated in this regard that there is a correlation between a higher need for cognitive closure, a lower number of information sources that are consulted before reaching a judgement, and a higher reliance on early or incomplete information (see Kruglanski and Fishman 2009, 345–347). Confidence in one's decision is higher in individuals with a high need for cognitive closure, as a result of the absence of extensive information processing (see Kruglanski and Fishman 2009, 345). Individuals with a high need for closure tend also to rely more on stereotypes and consensual information, and to react negatively to individuals who disrupt closure (see Kruglanski and Fishman 2009, 346, 349; Webster and Kruglanski 1994, 1050). Finally, they also prefer abstract information, as it can be applied across a variety of situations, thus providing a more permanent knowledge (see Kruglanski and Fishman 2009, 347–348). No inference can be made with respect to information needs.

5. Methodology

Drawing on the approach developed by Heinström (2005), this project studies the influence of these two factors on IB, using an exploratory mixed methods design. In the first phase, qualitative data will be collected to provide insights on this relationship. A series of semi-structured interviews will be conducted to gather data about participants' IB. Subjects will be assessed with respect to need for cognition and need for cognitive closure, and the method of constant comparison will be used to contrast IB reports across individuals who are high and low on each factor. Each participant will describe two critical incidents. Data gathered in this first phase will give preliminary insights on the influence of these factors on IB and allow the development of a questionnaire to emphasize those aspects of IB that may be influenced by need for cognition and need for closure.

In a second phase, quantitative data will be collected to determine, through correlation and multiple regression analyses, whether the influences on IB of the two factors can be demonstrated statistically. The IB questionnaire as well as two

standardized measures will be administered to a sample of 100 undergraduate students. The results of this phase will statistically evaluate the nature and extent of the influences of need for cognition and need for closure on IB.

6. Conclusion

This paper presents two cognitive factors that appear to influence IB: need for cognition and need for cognitive closure. It is hoped that the suggested methodology will produce results that demonstrate this influence and enrich the holistic IB framework.

7. References

- Baker, Linda M. 1996. A study of the nature of information needed by women with multiple sclerosis. *Library & Information Science Research* 18: 67–81.
- Cacioppo, John T. and Gary G. Berntson. 1994. Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin* 115 (3): 401–423.
- Cacioppo, John T. and Richard E. Petty. 1982. The need for cognition. *Journal of Personality and Social Psychology* 42 (1): 116–131.
- Cacioppo, John T., Richard E. Petty, Jeffrey A. Feinstein and W. Blair G. Jarvis. 1996. Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin* 119 (2): 197–253.
- Chaplin, William F. 1997. Personality, interactive relations, and applied psychology. In *Handbook of personality psychology*, edited by Robert Hogan, John Johnson and Stephen Briggs, 873–890. San Diego: Academic Press.
- Costa, Paul T. and Robert R. McCrae. 1985. *The NEO Personality Inventory manual*. Odessa, Fla.: Psychological Assessment Resources.
- Digman, John M. 1990. Personality structure: Emergence of the five-factor model. *Annual Review of Psychology* 41: 417–440.
- Golberg, Lewis R. 1981. Language and individual differences: The search for universal in personality lexicons. *Review of Personality and Social Psychology* 2: 141–166.
- . 1993. The structure of phenotypic personality traits. *American Psychologist* 48: 26–34.
- Heinström, Jannica. 2005. Fart surfing, broad scanning and deep diving: The influence of personality and study approach on students' information-seeking behavior. *Journal of Documentation* 61 (2): 228–247.

- Howe, Mark L., Michael Rabinowitz and Malcolm J. Grant. 1993. On measuring (in)dependence of cognitive processes. *Psychological Review* 100 (4): 737–747.
- Keppel, Geoffrey. 1991. *Design and analysis: A researcher's handbook*. 3rd edition. Englewood Cliffs, N.J.: Prentice-Hall.
- Kruglanski, Arie W. 1989. *Lay epistemics and human knowledge: Cognitive and motivational bases*. New York: Plenum.
- Kruglanski, Arie W. and Shira Fishman. 2009. The need for cognitive closure. In *Handbook of individual differences in social behavior*, edited by Mark R. Leary and Rick H. Hoyle, 343–353. New York: Guilford.
- Lewin, Kurt. 1936. *Principles of topological psychology*. New York: McGraw-Hill.
- McCrae, Robert R. and Paul T. Costa. 1987. Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology* 52: 81–90.
- Miller, Suzanne M. 1987. Monitoring and blunting: Validation of a questionnaire to assess styles of information seeking under threat. *Journal of Personality and Social Psychology* 52 (2): 345–353.
- Pettigrew, Karen E., Raya Fidel and Harry Bruce. 2001. Conceptual frameworks in information behavior. *Annual Review of Information Science and Technology* 35: 43–78.
- Petty, Richard E., Pablo Briñol, Chris Loersch and Michael J. McCaslin. 2009. The need for cognition. In *Handbook of individual differences in social behavior*, edited by Mark R. Leary and Rick H. Hoyle, 318–329. New York: Guilford.
- Petty, Richard E., Pablo Briñol, Zakary L. Tormala and Duane T. Wegener. 2007. The role of meta-cognition in social judgment. In *Social psychology: Handbook of basic principles*, edited by E. Tory Higgins and Arie W. Kruglanski. 2nd edition. New York: Guilford Press.
- Webster, Donna M. and Arie Kruglanski. 1994. Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology* 67 (6): 1049–1062.
- Williams-Piehot, Pamela, Tamera R. Schneider, Judith Pizarro, Linda Mowad and Peter Salovey. 2003. Matching health messages to information-processing styles: Need for cognition and mammography utilization. *Health Communication* 15 (4): 375–392.