CAIS Paper: Influence of Need for Cognition and Need for Cognitive Closure on information behaviour: Qualitative results

Alexandre Fortier (University of Western Ontario)

Abstract: This project studies the influence of two traits, Need for Cognition and Need for Cognitive Closure, on information behaviour. Qualitative analysis of 40 critical incidents collected through semi-structured interviews with undergraduate students demonstrates four distinct profiles: inquisitive enthusiasts, pragmatic enthusiasts, indifferent minimalists and concerned minimalists.
Résumé :

1. Problem

Variations in people's interactions with information have been studied mainly in terms of specific occupations, roles or socio-demographic groups. Individual differences, which have long been of interest to understand variations in the ways in which individuals think, feel and act, have also been explored. Heinström (2005), for instance, examined the influence of personality factors on information-seeking style, using the results of a standard five-factor personality assessment (NEO Five-Factor Inventory, Costa and McCrae 1985). Two other stable individual traits that can enlighten the understanding of intra-individual variations in information behaviour are Need for Cognition (Cacioppo and Petty 1982) and Need for Cognitive Closure (Kruglanski 1989).

Need for Cognition is defined as the tendency to engage in and enjoy cognitive efforts (Cacioppo and Petty 1982). This motivation varies along a bipolar continuum. An individual with a high Need for Cognition finds satisfaction in thinking whereas an individual with a 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). Research in psychology has demonstrated clear links between variations in Need for Cognition and some aspects of information behaviour studied in information science. Individuals with a high Need for Cognition are more likely to engage in information seeking activities than individuals with a low Need for Cognition (Cacioppo et al. 1996, 239–242). An individual with a high Need for Cognition will also seek more information, evaluate more thoroughly the quality of the information found, be more likely rely on all of the pertinent information (as opposed to relying on simple cues) and use a wider variety of information sources, including sources that were previously unknown (Cacioppo et al. 1996, 239; Petty et al. 2009). Last, simple messages tend to be more accepted by individuals with a low Need for Cognition, but rejected by individuals with a high Need for Cognition, and vice versa (e.g. Williams-Piehota et al. 2003).

Need for Cognitive Closure, in contrast, is defined by a desire for unambiguous information, as opposed to uncertainty or ambiguity (Kruglanski 1989). It is conceptualized as a stopping mechanism that allows one to stop generating and testing hypotheses, and to form a judgment. This mechanism differs among individuals: some people may form a definitive opinion based on limited information while others may always resist making up their minds, whatever 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 tendencies in their behaviours. On the one hand, individuals with a high Need for Cognitive Closure want to quickly terminate a state in which they feel uncertain (urgency tendency), and, on the other hand, they want to keep that state 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 in psychology has demonstrated in this regard that there is a correlation between a higher Need for Cognitive Closure and a lower number of information sources that are sought before reaching a given judgement and a higher reliance on early or incomplete information (see Kruglanski and Fishman 2009, 345–347). Another aspect of information behaviour related to variations in Need for Cognitive Closure is information use. 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). Finally, they also prefer abstract descriptions and category labels, as these can be applied across a variety of situations, thus providing a more permanent knowledge.

This study aims to illustrate how variations in Need for Cognition and Need for Cognitive Closure influence the ways in which information is needed, sought and used.

2. Methodology

Data were collected through 20 semi-structured interviews using the critical incident technique (Flannagan 1954) with undergraduate students selected through a purposive sampling method. A maximum variation strategy was used to recruit participants high and low in each of the two traits. Participants were tested for their level of Need for Cognition (Abridged version of the Need for Cognition Scale, Cacioppo, Petty and Kao 1984) and Need for Cognitive Closure (Abridged version of the revised Need for Cognitive Closure Scale, Webster and Kruglanski 1994; revised by Roets and Van Hiel 2007; 2011). They described two critical incidents, one related to their schoolwork and the other to a current news event, resulting in 40 units of analysis. For the analysis, the scores of the two for measures were dichotomized. Participants were equally distributed among the four profiles (e.g. high Need for Cognition and low Need for Cognitive Closure). Each unit of analysis was submitted to a qualitative analysis using the constant comparative method (Glaser 1965) in order to compare behavioural tendencies in incidents emanating from identical profiles and behavioural tendencies in incidents emanating from different groups. A first run of analysis was done blindly (i.e. with the researcher only knowing that participants shared a similar profile, not which one) with the two participants whose scores were the most extreme in each profile. A second run of analysis was then performed using all the participants.

3. Results

Results indicate four distinct profiles.

Inquisitive enthusiasts (high Need for Cognition; low Need for Cognitive Closure) express multiple information needs and develop new ones as they are finding information. Uncertainty drives them to know more and they like to form their own opinions. In so doing, they perform extensive information seeking, using numerous and diverse information sources. They do not rely selectively on information encountered early in the process, nor do they neglect new information. They evaluate the information they consume, and they particularly dislike information sources that are uncritical or biased towards one perspective. When they are interested in learning about something, they easily find a way to overcome barriers. They are reluctant to give an opinion before having gathered enough information on both sides. Saturation never seems to be reached, and they are always open to new information.

Pragmatic enthusiasts (high Need for Cognition; high Need for Cognitive Closure) share many characteristics with Inquisitive enthusiasts, but differ in their discomfort with uncertainty. They have a propensity to describe a 'usual' way to approach a situation when asked to describe one particular incident, often referring to their "typical", "usual", "normal" manner or about what they "tend to do". They clearly enjoy performing cognitive tasks, but they have, consciously, developed strategies to accomplish those tasks as efficiently as possible. These strategies include keeping the number of information sources to a manageable number and relying primarily on information sources that they have already evaluated and that have served them well in the past. One type of information sources they use widely is tertiary sources, which consolidate and synthesise information. They reach a conclusion very quickly, are confident in their judgment and concentrate on finding sources that confirm it.

Indifferent minimalists (low Need for Cognition; high Need for Cognitive Closure) display low enthusiasm towards cognitive activities. They dislike uncertainty and are interested in simple questions. They consult as few sources as possible and do not seem to notice many details about them. Subjects in this category often referred to vague information sources such as "online" or "on television", without being able to be more specific. They also do not appear to have criteria for selecting information sources outside of the perceived availability of a source: they consult what is available when they need it and stop caring about if it becomes difficult to access. In fact, the slightest barrier stops them. They prefer simple and easy information sources and do not bother with those that look complicated. They also prefer sources that they know well.

Concerned minimalists (low Need for Cognition; low Need for Cognitive Closure) share many tendencies with Indifferent minimalists: they have a low enthusiasm towards cognitive activities in general and they like sources that are easy to access and to consume. They do not seek 'the best source', but one that will do, even though they are conscious that it could be biased or incomplete. Their point of saturation is reached when all the information that was easily accessible is gathered. They do, however, pay attention to the quality information sources, even though they do not devote a great deal of energy to determining quality. They will not consume just anything: they recognize that one source could be unreliable or that another source could be biased, and they will avoid them. Their evaluation, however, does not seem to be very thorough and, if it requires too much effort, they will stop thinking about it or, perhaps, discard the information source.

4. Conclusion

Results show that Need for Cognition and Need for Cognitive Closure affect how people need, seek and use information. Results of this qualitative phase have been used to develop a quantitative instrument, which is currently under testing. Understanding this phenomenon, as well as the influence of other individual differences, is necessary to fully understand the complexity of human information behaviour, which is essential to build a global evidence base to guide information science practice.

5. References

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.

Cacioppo, John T., Richard E. Petty and Chuan Feng Kao. 1984. The efficient assessment of need for cognition. *Journal of Personality Assessment* 48 (3): 306–307.

Costa, Paul T. and Robert R. McCrae. 1985. *The NEO Personality Inventory manual*. Odessa, Fla.: Psychological Assessment Resources.

Flanagan, John C. 1954. The critical incident technique. *Psychological Bulletin* 51 (4): 327–358.

Glaser, Barney G. 1965. The constant comparative method of qualitative analysis. Social Problems 12: 436–445.

Heinström, Jannica. 2005. Fast 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.

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.

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.

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.

Roets, Arne and Alain Van Hiel. 2007. Separating ability from need: Clarifying the dimensional structure of the need for closure scale. *Personality and Social Psychology Bulletin* 33 (2): 266–280.

———. 2011. Item selection and validation of a brief, 15-item version of the need for closure scale. *Personality and Individual Differences* 50 (1): 90–94.

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-Piehota, 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.