Consumers' Online Cognitive Scripts: A Research Program Based on Neurophysiology

Sylvain Sénécal, Pierre-Majorique Léger, Marc Fredette, René Riedl

Corresponding author: sylvain.senecal@hec.ca

Shank and Abelson (1977) define a cognitive script as a "predetermined, stereotyped sequence of actions that define a well-known situation." For instance, a consumer going to a fast-food restaurant may activate his or her "fast-food restaurant" script which consists of a series of steps such as placing the order, waiting, receiving the order, eating, paying, etc. The main function of a script is to facilitate cognitive processing (Smith and Houston 1985). Basically, it allows people to understand and behave appropriately in a particular situation (Abelson 1981).

Although consumer researchers have used script theory to investigate consumer behaviors in offline settings, to the best of our knowledge, no research has yet investigated how consumers form and activate scripts in online settings. From a theoretical viewpoint, investigating online scripts is important because online interactions usually do not involve employees. Hence, instead of a human-human relationship, interactions are computer-mediated online, thereby possibly influencing scripts. Hence, a significant contribution of this research program is to validate whether consumers use scripts when using self-service technologies. From a managerial viewpoint, investigating online scripts is also important. A better understanding of how consumers form and activate scripts when visiting a website could help managers propose more satisfying online experiences. Also, it can contribute to better locking-in consumers with navigation designs that can be learned rapidly, and this, in turn, may positively affect purchases (Johnson and Bellman 2004).

The proposed research program has three main objectives: 1) verify and validate that consumers activate cognitive scripts when shopping online; 2) understand how cognitive scripts are formed by consumers over multiple shopping trips; and 3) investigate how consumers activating different cognitive scripts respond when facing a novel shopping environment (e.g., a new store).

Recent advances in neuroscience suggest that the human brain is proactive (Bar 2009), "it is continuously generating predictions that approximate the relevant future based on memories of past experiences and associative activation" (Bar and Neta 2008, p. 328). Hence, Bar (2009) suggests that the human brain can been seen as working under the following universal principle: analogy → associations → predictions. When encountering a situation, the brain tries to match the input information (e.g., Burger King) with a similar representation existing in memory. By activating a certain analogy, information that is associated with this analogy in memory is triggered, generating a prediction of what to expect next (Bar 2009, Bar and Neta 2008). Hence, Bar (2009, p. 1239) suggests that cognitive scripts could be at the basis of human brain activity and consequently human behaviors: "Information encoded in our memory guides and sometimes dictates our future behavior. One can look at our experience as stored in memory as scripts".

The objective of the pilot study is to validate that consumers do activate cognitive scripts while shopping online. To this end, we conduct a lab experiment. The following neurophysiological tools are used to collect the data: 1) EEG (Electroencephalography), 2) GSR (Galvanic Skin Response) and EKG (Heart rate), and 3) video capture to collect information about which webpages and page sections where processed during the experimental task. The lab experiment is conducted in HEC Montreal's Tech3Lab. Results of this pilot study will be presented at the conference.

REFERENCES

- Abelson, R. P. (1981). "Psychological Status of the Script Concept," American Psychologist, (36: 7), pp. 715-29.
- Bar, M. (2009). "The Proactive Brain: Memory for Predictions," The Philosophical Transactions of the Royal Society, (364), pp. 1235-1243.
- Bar, M., and Neta, M. (2008). "The Proactive Brain: Using Rudimentary Information to Make Predictive Judgments," Journal of Consumer Behaviour, (7:4/5), pp. 319-330.
- Johnson, E.J., Bellman, S., et al. (2003). "Cognitive Lock-In and the Power Law of Practice," Journal of Marketing, (67:2), pp. 62-78.
- Smith, R.A., and Houston, M.J. (1986). "Measuring Script Development: An Evaluation of Alternative Approaches", in Advances in Consumer Research, R.J. Lutz (ed.), Provo, UT: Association for Consumer Research, (13), pp. 504-508.
- Schank, R.C., and Abelson, R.P. (1977). Scripts, Plans, Goals and Understanding, Hillsdale, New Jersey: Lawrence Erlbaum Associates.