

## **SCHEMAS AND EVALUATION: RECOGNITION OF BRIEFLY PRESENTED PERSONALITY ADJECTIVES**

Jeffrey M. McKillop  
Queen's University

### **ABSTRACT**

*The present study explored how evaluative and schematic processes may influence performance within a simple word detection task. Briefly presented adjectives that participants later endorsed as descriptive of their personality were no more privileged in item recognition than adjectives that participants did not endorse. Recognition of desirable adjectives, however, was significantly greater than recognition of undesirable adjectives. The results suggests possible cognitive filtering at the immediate or near immediate perceptual level that may serve to enhance positive information or disregard negative information.*

### **INTRODUCTION**

Current research in personality and social psychology has placed greater emphasis on the cognitive organization and processing of self-relevant information. Of particular interest has been the suggestion that the self can be represented as an integrated collection of cognitive structures or self-schemas. Self-schemas are thought to represent relatively stable repositories of self-knowledge that direct or guide attention to information in the environment. Ideally, self-schemas aid in the efficient processing of information and provide a context in which this information can be organized.

Theories that have emphasized a schematic organization of self-knowledge have argued that self-relevant material is distinct from other information and is defined by enhanced depth and speed of processing. Considerable research has shown that individuals who possess a self-schema within a particular domain are more sensitive to information involving that domain, are able to process information about that domain with greater efficiency, and demonstrate enhanced memory for domain-relevant information (Fekken & Holden, 1992; Markus & Wurf, 1987; Rogers, Kuiper, & Kirker, 1977). Although encoding stimuli with reference to the self does result in greater depth and speed of processing, it remains unclear whether this enhancement is due to the cognitive organization of self-relevant information or due to other features of the stimuli not necessarily related to self-content (Gillihan & Farah, 2005). For example, Ferguson, Rule, and Carlson (1983) initially noted that memory for trait adjectives rated for self-reference was not superior to memory for adjectives rated on desirability alone. Ferguson et al. argued that the critical dimension underlying self-reference may not be the self but more the degree to which a particular item evokes evaluation: that is, whether an item is viewed as good or bad, positive or negative. Subsequent research has shown robust evidence for the possible confound between self-reference and desirability (Symons & Johnson, 1999).

The intent of the present study is to explore how evaluative and schematic processes may influence performance within a simple word detection task. Specifically, this study is interested

in determining whether participants' ability to detect briefly presented personality adjectives is driven by participants' endorsement of those items or by item desirability. If schema theory holds, participants should be more sensitive to adjectives that are descriptive of their personality than to those adjectives they deem to be not descriptive. However, if the evaluative quality of personality adjectives leads to enhanced processing, then participants should demonstrate an increased sensitivity to those items that strongly evoke evaluation.

## **METHOD**

### **Participants**

The participants in this study were 18 female and 18 male students enrolled in a first-year psychology course at Queen's University in Kingston, Ontario. Participants were tested individually and received course credit for their involvement in this study.

### **Materials**

*Stimulus list.* The stimuli in this study consisted of 24 personality adjectives and 12 common words that had no reference to personality. The personality adjectives were selected from the set of 555 trait words provided by Anderson (1968). This set of 555 trait words was further reduced to 96 words by selecting only those personality adjectives that contained either four, five, or six letters. A separate group of 103 student participants were asked to provide ratings of social desirability on the 96 personality adjectives. Ratings of social desirability were based on a 7-point scale where 1 equalled "extremely undesirable" and 7 equalled "extremely desirable".

The mean desirability ratings for the 96 personality adjectives ranged from 1.30 to 6.73 with an average value of 3.92. Based on these ratings and word frequency norms provided by Francis, Kučera, and Mackie (1982), 12 undesirable adjectives and 12 desirable adjectives were selected to represent the final experimental set. The mean desirability ratings for the 12 adjectives of undesirable content ranged from 1.30 to 2.37 with an average value of 1.85. The mean desirability ratings for the 12 adjectives of desirable content ranged from 5.32 to 6.44 with an average value of 5.95. Within each set there was an equal division of adjectives that contained four, five, or six letters.

The set of 12 common words that had no reference to personality were also selected from Francis et al. (1982). Within the set of common words there was an equal division of words containing four, five, or six letters. Personality adjectives and words that had no reference to personality did not differ significantly from each other in terms of frequency of appearance in the English language.

*Personality adjective checklist.* A personality questionnaire was constructed using the 96 adjectives that contained four, five, or six letters. Adjectives were arranged in alphabetical order and placed in questionnaire format. Imbedded within this questionnaire was the set of 12 undesirable and 12 desirable adjectives from the stimulus list. This questionnaire asked

participants to endorse only those adjectives that they believed were descriptive of their personality.

## Procedure

After obtaining informed consent, each participant was brought into an enclosed testing room and seated in front of a table containing a computer monitor and keyboard. Participants were informed that they would be completing a word detection study and that instructions for each task and the collection of their responses would be controlled by the computer.

Participants were prompted to focus their attention on the center of the monitor screen and press the spacebar to initiate a word detection trial. Each word detection trial began with the presentation of a fixation point displayed on the center of the monitor screen for approximately 500 milliseconds. Based on a prearranged random order, one of the 36 stimulus items was then displayed in lowercase letters (e.g., crude) on the center of the monitor screen. Once the stimulus item had been displayed for 16.7 milliseconds, the item was partially masked by a field of lowercase letters (xxxxxx) for approximately 500 milliseconds.

After each trial, participants were prompted to push the 'Y' key if they were able to detect the presence of a word or the 'N' key if they were unable to detect the presence of a word. If participants answered 'Y' they were asked to guess the identity of the word. The program then prompted participants to press the spacebar when they were ready for a new word detection trial. Once participants had completed the 36 word detection trials, they were asked to complete the brief personality questionnaire.

## RESULTS

On average, participants attempted to guess the identity of 12.44 (35 percent) of the briefly presented stimuli with a standard deviation of 6.48 words. The mean number of words that participants were able to accurately identify was 7.56 (21 percent) with a standard deviation of 4.66 words. The content of approximately 93 percent of the incorrect guesses involved words that did not refer to personality, with only 3 percent referring to adjectives of positive content and 4 percent referring to adjectives of negative content.

In order to determine whether accurate identification was related to item endorsement, a single-factor within-subjects multivariate analysis of variance was conducted on the percentage of stimuli that participants were able to correctly identify across endorsed personality adjectives, words that had no reference to personality, and rejected personality adjectives. This analysis failed to demonstrate a significant main effect of self-descriptiveness using Wilk's criterion,  $F(2,34) = 1.61, p > .10$ .

Next, a single-factor within-subjects multivariate analysis of variance was conducted on the percentage of desirable adjectives, words that had no reference to personality, and undesirable adjectives whose content participants were able to accurately identify. Using Wilk's criterion, the results of this analysis demonstrated a significant main effect of desirability,  $F(2,34) = 4.43, p < .$

05. Post hoc dependent t-tests indicated that participants were able to accurately detect a greater percentage of desirable adjectives (mean = .24) than adjectives of undesirable content (mean = .18),  $t(35) = 2.91, p < .01$ . Detection of desirable adjectives or undesirable adjectives, however, was not significantly different than detection of words that had no reference to personality (mean = .21).

## DISCUSSION

Research on self-schemas has relied primarily on methods that emphasize deliberate or explicit self-reference or reflection. The current study attempted to extend a schematic model of self to a fairly restricted perceptual task that did not demand explicit self-reference. If self-schemas arise automatically, it was hypothesized that these schemas might influence initial detection of adjectives deemed descriptive by participants. No evidence, however, was found to support a schematic model of self at least at the initial perceptual level. Briefly presented adjectives that participants later endorsed as descriptive of their personality were no more privileged in item recognition than those adjectives that participants did not endorse.

Some support, however, was found for an evaluative model of item detection but in a manner different than originally proposed. Detection of partially masked items was biased toward positive adjectives. Specifically, recognition of desirable adjectives was significantly greater than recognition of undesirable adjectives. This result suggests possible cognitive filtering at the immediate or near immediate perceptual level that may serve to enhance positive information or disregard negative information. Participants may be more sensitive to desirable information because participants view themselves positively or possess a positive frame of self-reference (Herbert et al., 2009).

A problematic feature of the present study is that it can not clearly distinguish between whether differences in item recognition are a function of implicit self-reference or due to the pleasantness of the briefly presented stimuli. That is, participants may show heightened sensitivity to desirable information not because this information is consistent with their self-image, but simply because this information is pleasant. As well, the absence of a significant difference between accurate identification of personality adjectives and common words also questions whether self-reference is distinct from a more general semantic process.

Given that it remains difficult to identify a situation in which information processing does not occur within an emotional context or in some way evokes an evaluative response (Feldman Barrett, 2006), it is reasonable to hypothesize that responding to personality items may be best conceptualized as a function of both evaluation and cognition. Yet, until most recently, investigation of interdependent evaluative-cognitive self-processes has remained less explored. Greater interest in this area is now beginning to emerge (Moran, Macrae, Heatherton, Wyland, & Kelley, 2006; Perkins & Forehand, 2006). It is hoped that this study increases understanding of evaluative and cognitive processes within personality and social psychology research.

## REFERENCES

- Anderson, N. H. (1968). Likableness ratings of 555 personality trait words. *Journal of Personality and Social Psychology, 9*, 272-279.
- Fekken, G. C., & Holden, R. R. (1992). Response latency evidence for viewing personality traits as schema indicators. *Journal of Research in Personality, 26*, 103-120.
- Feldman Barrett, L. (2006). Valence is a basic building block of emotional life. *Journal of Research in Personality, 40*, 35-55.
- Ferguson, T. J., Rule, B. G., & Carlson, D. (1983). Memory for personality relevant information. *Journal of Personality and Social Psychology, 44*, 251-261.
- Francis, W. N., Kučera, H., & Mackie, A. W. (1982). *Frequency analysis of English usage: Lexicon and grammar*. Boston: Houghton-Mifflin.
- Gillihan, S. J., & Farah, M. J. (2005). Is the self special? A critical review of evidence from experimental psychology and cognitive neuroscience. *Psychological Bulletin, 131*, 76-97.
- Herbert, C., Ethofer, T., Anders, S., Junghofer, M., Wildgruber, D., Grodd, W., & Kissler, J. (2009). *Social Cognitive and Affective Neuroscience, 4*, 35-49.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology, 38*, 299-337.
- Moran, J. M., Macrae, C. N., Heatherton, T. F., Wyland, C. N., & Kelley, W. M. (2006). Neuroanatomical evidence for distinct cognitive and affective components of self. *Journal of Cognitive Neuroscience, 18*, 1586-1594.
- Perkins, A. W., & Forehand, M. R. (2006). Decomposing the implicit self-concept: The relative influence of semantic meaning and valence on attribute self-association. *Social Cognition, 24*, 387-408.
- Rogers, T. B., Kuiper, N. A., & Kirker, W.S. (1977). Self-reference and the encoding of personal information. *Journal of Personality and Social Psychology, 35*, 677-688.
- Symons, C. S., & Johnson, B. T. (1999). The self-reference effect in memory: A meta-analysis. *Psychological Bulletin, 121*, 371-394.

## AUTHOR NOTE

This article is based on the author's doctoral dissertation. I would like to thank Cynthia Fekken for her assistance in the preparation of this article.

October 27, 2009