Scene Typicality Influences Long-term Effects of Mere Exposure

Ken MATSUDA (ken@p01.mbox.media.kyoto-u.ac.jp)
Takashi KUSUMI (kusumi@educ.kyoto-u.ac.jp)
Faculty of Education, Kyoto University
Sakyo-ku, Kyoto 606-8501 Japan

We examined how prototypes of the concept affect the mere exposure effect for scene on affective judgments for the long-term interval. Using concept formation paradigms (Barsalou et al., 1999) and mere exposure (Zajonc, 1968), Matsuda and Kusumi (2001) found that repeated exposure to exemplars during the process of concept formation could create prototypes that influence affective judgments such as liking, beauty, and nostalgia. Matsuda and Kusumi used short intervals (5 min) between repeated exposure to stimuli and affective judgments; this made it difficult to divide judgment criteria into mental representation (semantic memory) and the experience of repeated exposure (episodic memory). The present study uses longer intervals. Given that implicit memory influences the effect of mere exposure (Schacter, 1987; Seamon et al., 1995; Squire, 1992) and the retention curve becomes a U-shape (Matsuda et al., 2003), it is important to explore the effects of a long-term interval on concept formation and affective judgment.

Method

Design. We used a factorial design with three typical stimuli (high, medium, and low) and four exposure frequencies (0, 1, 3, and 6 times).

Participants. Thirty-six Japanese university students took part in the study.

Materials. We used 54 photographs of Buddhist temples, including main buildings, gates, etc. These were divided into three groups of 18, according to high, medium, and low typicality (Matsuda and Kusumi, 2001).

Procedure. There were two phases, the study phase and the test phase. During the study phase, we displayed the stimuli successively for a 1-second ISI. After an interval of one week, participants judged typicality, familiarity, liking, beauty, and nostalgia using a 9-point scale and old-new recognition.

Results and Discussion

Judgments about Typicality (Fig. 1A) and Familiarity. Judgment scores for highly typical stimuli increased with frequency of exposure, while scores for less typical stimuli tended to decrease. In Matsuda and Kusumi’s 5-min interval condition, exposure frequency affected judgments about typicality and familiarity equally, regardless of a stimuli’s original typicality.

Judgments about Liking (Fig. 1B) and Beauty. In judgments about liking and beauty, scores increased with repetitive presentation of stimuli during high typicality over a 6-fold frequency range. On the other hand, scores during low typicality decreased with repetitive presentation, as they did for other criteria.

Judgments about Nostalgia and Recognition (Fig. 1C). In judgments about recognition, the effects of stimuli typicality disappear, and the effects of exposure frequency decrease after a delay. After the interval had passed, judgments were made based on knowledge (semantic memory) of Buddhist temples rather than the experience of exposure to the stimuli (episodic memory).

In conclusion, we found that judgment scores for highly typical stimuli increased with exposure frequency, while scores tended to decrease for less typical stimuli. As well, a certain exposure frequency was required to create a long-term effect on affective judgments that use mere exposure.

Figure 1: Typicality, Liking, and Recognition judgment scores.

References