

A Long Interval affects the Mere Exposure Effect for the Prototypes

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We examined how a long interval influences concept formation and affective judgment following a mere exposure.

Using a mere exposure (*e.g.*, Zajonc, 1968) and the concept formation paradigm (*e.g.*, Barsalou *et al.*, 1999), Matsuda & Kusumi (2002) discovered three points. First, concept formation with repeated exposure was based on the event, and the concept builds a prototype. Second, the judgment of like/dislike is affected by stimulus typicality and exposure frequency. Third, prototypical stimuli that integrate the dimensions of each individual are preferred if the value of that dimension is weighted.

While Matsuda & Kusumi (2002) used a short retention interval (5 min), we used a longer interval because it is important to explore the long-term process of concept formation and affective judgment, since implicit memory influences the mere exposure effect (*e.g.*, Schacter, 1987; Squire, 1992; Seamon *et al.*, 1995) and the retention curve is U-shaped (Matsuda, 2000).

Method

Design Two within-subject variables: 3 (typicality of stimuli: high, medium, low) × 4 (exposure frequency: 0, 1, 3, 5 times).

Participants Twenty-four Japanese university students.

Material Pictures of unfamiliar fish based on Barsalou *et al.* (1999). The pictures were classified into types A and B. All the stimuli consisted of 10 dimensions. All the stimuli shared D7~D10. The shared dimensions determined the typicality of the independent variables. Highly typical stimuli shared D3~D10, medium ones shared D5~D10, and low ones shared D7~D10. Non-shared dimensions had an original value. The within-distracters were prototypical stimuli integrated using the same exposure frequency. The between-distracter integrated types A and B.

Procedure The participants studied the pictures of unfamiliar fish, which consisted of 10 dimensions, 0, 1, 3, or 5 times, and formed a concept based on classifying the fish into one of two groups (A or B). Each stimulus was displayed for 7 sec with a response time of 2 sec, a feedback time of 1 sec, and an interstimulus interval (ISI) of 1 sec. After an interval (2 weeks), the participants judged typicality, familiarity, like/dislike, prettiness and nostalgia for each picture, using a nine-point scale, and reported whether they recognized new and old items.

Results and Discussion

A. Judgment of Typicality and Familiarity The effect of exposure frequency disappeared for exemplary stimuli, but remained for the integrated stimuli. This means that, after an interval, each exemplary memory was integrated within a concept category. In addition, since the judgment score for

stimuli integrated between categories increased, this suggests that concept cohesiveness decreased (Figure 1A).

B. Judgment of Like/Dislike and Attractiveness Given a short interval (5 min), highly representative stimuli were preferred overall, while the effect of exposure frequency was detected for unusual stimuli. After two weeks, these effects disappeared, while the judgment scores for like/dislike and attractiveness for the integrated stimuli remained high (Figure 1B).

C. Judgment of Nostalgia and Recognition The effect of stimuli typicality disappeared and the effect of exposure frequency decreased for both of these items. Conversely, the judgment of recognition for within-distracters, which integrates high frequency dimensions, was higher. The memory of each individual decreased with the interval, while prototypes integrating the features of each individual were retained (Figure 1C).

In conclusion, a long interval following a mere exposure decreased the cohesiveness of the learned concepts, while prototypes were retained. Second, the interval did not decrease the affective judgment scores for the prototypical stimuli, but decreased them for learned individuals.

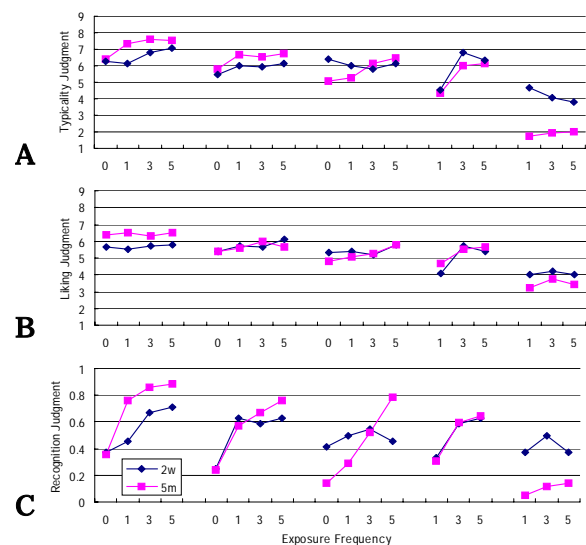


Figure 1 Judgment scores for Typicality, Liking, and Recognition

References

- Barsalou, L. W., Huttenlocher, J. & Lamberts, k. 1999 Basing Categorization on Individuals and Events, *Cognitive Psychology*, 36,203-272.
- Matsuda, K. & Kusumi, T. 2002 The mere exposure effect in concept formation. Paper presented at 43rd ANNUAL MEETING of the PSYCHONOMIC SOCIETY, Kansas City.