SDT and music

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Exposure effects on music preference and recognition

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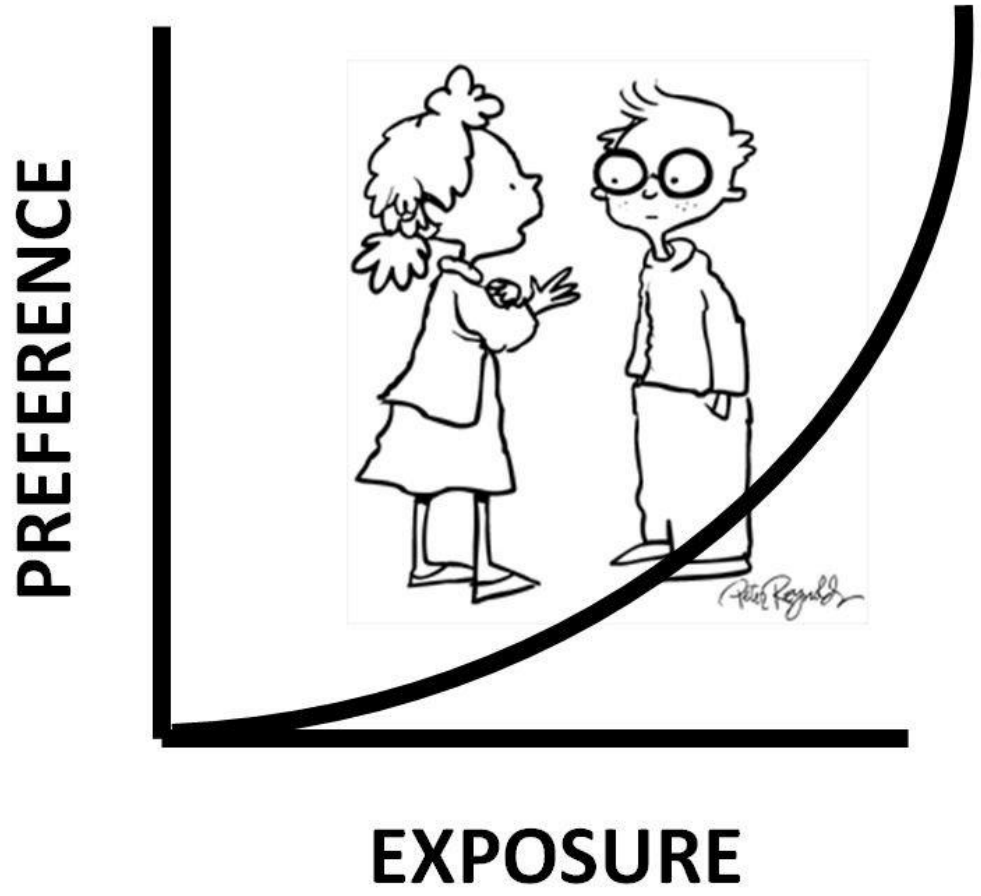
In three experiments, the effects of exposure to melodies on their subsequent liking and recognition were explored. In each experiment, the subjects first listened to a set of familiar and unfamiliar melodies in a study phase. In the subsequent test phase, the melodies were repeated, along with a set of distractors matched in familiarity. Half the subjects were required to rate their liking of each melody, and half had to identify the melodies they had heard earlier in the study phase. Repetition of the studied melodies was found to increase liking of the unfamiliar melodies in the affect task and to be best for detection of familiar melodies in the recognition task (Experiments 1, 2, and 3). These memory effects were found to fade at different time delays between study and test in the affect and recognition tasks, with the latter leading to the most persistent effects (Experiment 2). Both study-to-test changes in melody timbre and manipulation of study tasks had a marked impact on recognition and little influence on liking judgments (Experiment 3). Thus, all manipulated variables were found to dissociate the memory effects in the two tasks. The results are consistent with the view that memory effects in the affect and recognition tasks pertain to the implicit and explicit forms of memory, respectively. Part of the results are, however, at variance with the literature on implicit and explicit memory in the auditory domain. Attribution of these differences to the use of musical material is discussed.

Mere exposure



Mere exposure in music

- If we are exposed to a certain music/genre of music, over time we will like it more

> The first to document this phenomenon was Meyer (1903), who presented to subjects a dozen repetitions of a piece of Oriental-like music (containing quarter-tone intervals instead of the semitone intervals to which Western listeners are accustomed) that he had composed. After

- That's why you have different jingles for department stores, etc.

Affect vs recognition

- For the relationship between implicit and explicit memory, affect assessment can be used instead of recognition

Rate the attractiveness of this meme

Have you seen this meme?

Design

- Selected tunes were known (often played somewhere) and unknown (no longer played), 2 sets
- 40 (20+20) tunes played to the participants)
- In the second part they had another 80 tunes
- One half of the participants had to rate how much they liked it, the other half whether they had heard it before (10-point scale)
- Then the participants were invited after a few months

Materials. The material consisted of 80 melodic lines taken from the popular repertoire (Berthier, 1979). These melodies were divided into two sets (Set A and Set B), so that each contained 20 familiar and 20 unfamiliar excerpts. The familiar melodies were equally familiar in the two sets, with a mean rating of 4.5 and 4.3 (following our normative data, where 1 means *unfamiliar*, and 5 *highly familiar*; Peretz, Babaï, Lussier, Hébert, & Gagnon, 1995) for Sets A and B, respectively. They were also matched in length, with an average duration of 9.1 and 8.8 sec for Sets A and B, respectively. The unfamiliar melodies were also matched in length in the two sets, with means of 8.1 and 7.9 sec; they came from the same songbook (Berthier, 1979) and were selected because they were no longer sung or played. No normative data were available for

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So we can use methods measuring confidence

Results

- Apriori familiarity worked
- They normalised the responses by individ
  z-transformation
- Differences between the melody sets were
  not

sical selections was confirmed, since the subjects achieved a hit rate of .85 and .89 in the groups subsequently performing the affect and recognition tasks, respectively. The associated false alarm (FA) rates were .10 and .08, respectively. Responses were considered as hits when they

In the test phase, each subject's rating on the 10-point scale was normalized, in order to control for individual differences in the use of response scales. Indeed, there was some variability: Individual means ranged between 3.9 and 6.6, and individual standard deviations between 1.4 and 3.8. Thus, each rating was converted to a *z* score, using the subject's own mean and standard deviation. This was

Affect

- Familiar melodies are preferred
- Presentation led to higher preference

Affect task. The ANOVA, taking familiarity and presentation as within-subjects factors, revealed an interaction between these two factors [$F(1,23) = 8.31$, $MS_e = 0.03$, $p < .01$], indicating that prior study increases liking of unfamiliar melodies [$t(23) = 3.424$, $SE_{dm} = 0.04$, $p < .001$, by a unilateral test] but does not influence affect ratings for familiar melodies [$t(23) = 0.282$, $SE_{dm} = 0.04$]. Familiar melodies are generally preferred to the unfamiliar melodies, as supported by the presence of a main effect of familiarity [$F(1,23) = 17.50$, $MS_e = 0.28$, $p < .001$].

Recognition

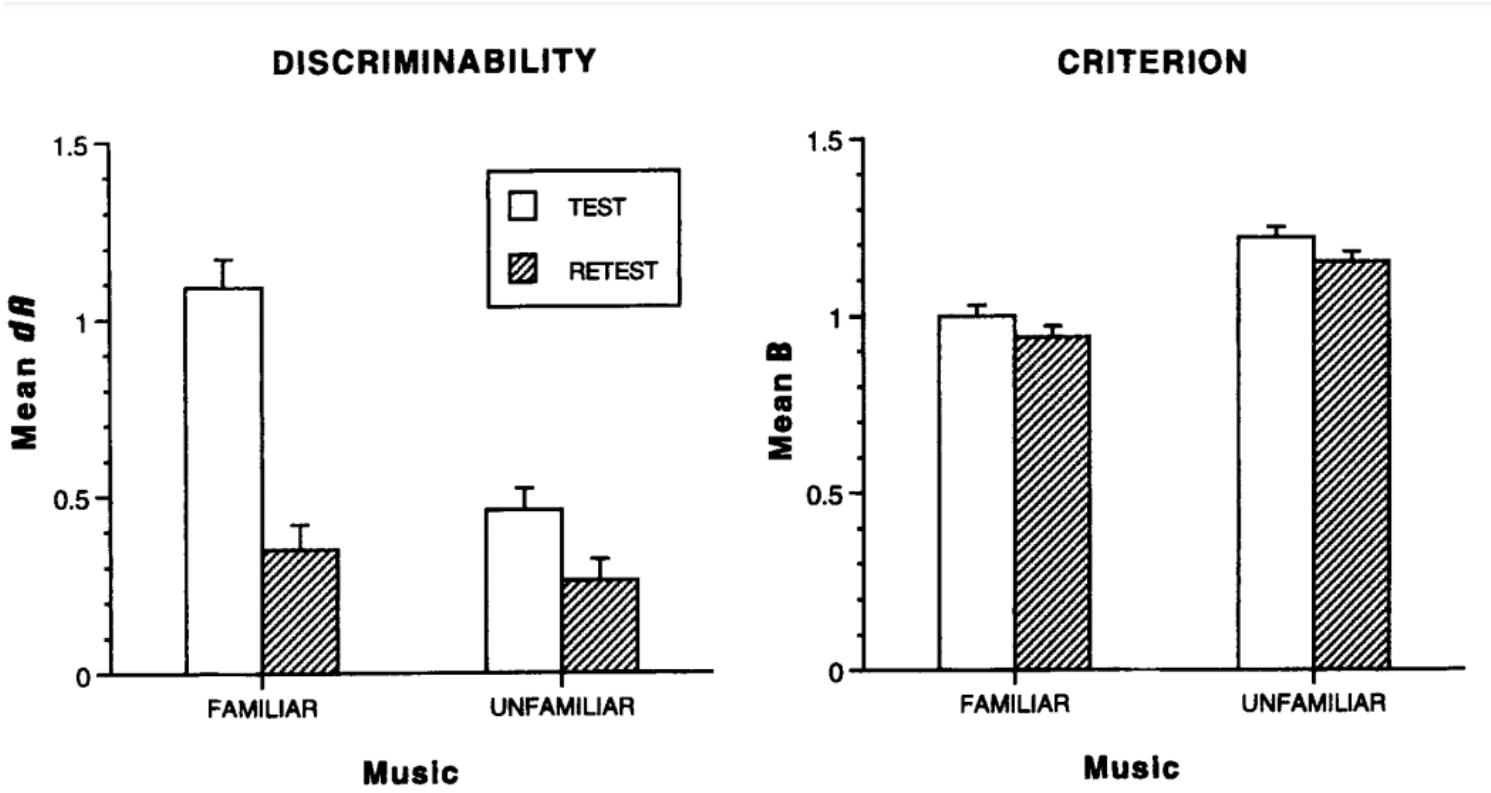

Figure 1. Discriminability (left panel) and criterion measures (right panel) for the familiar and unfamiliar musical excerpts, derived from signal detection procedures applied to the recognition ratings at test and retest in Experiment 1. Error bars represent standard errors.

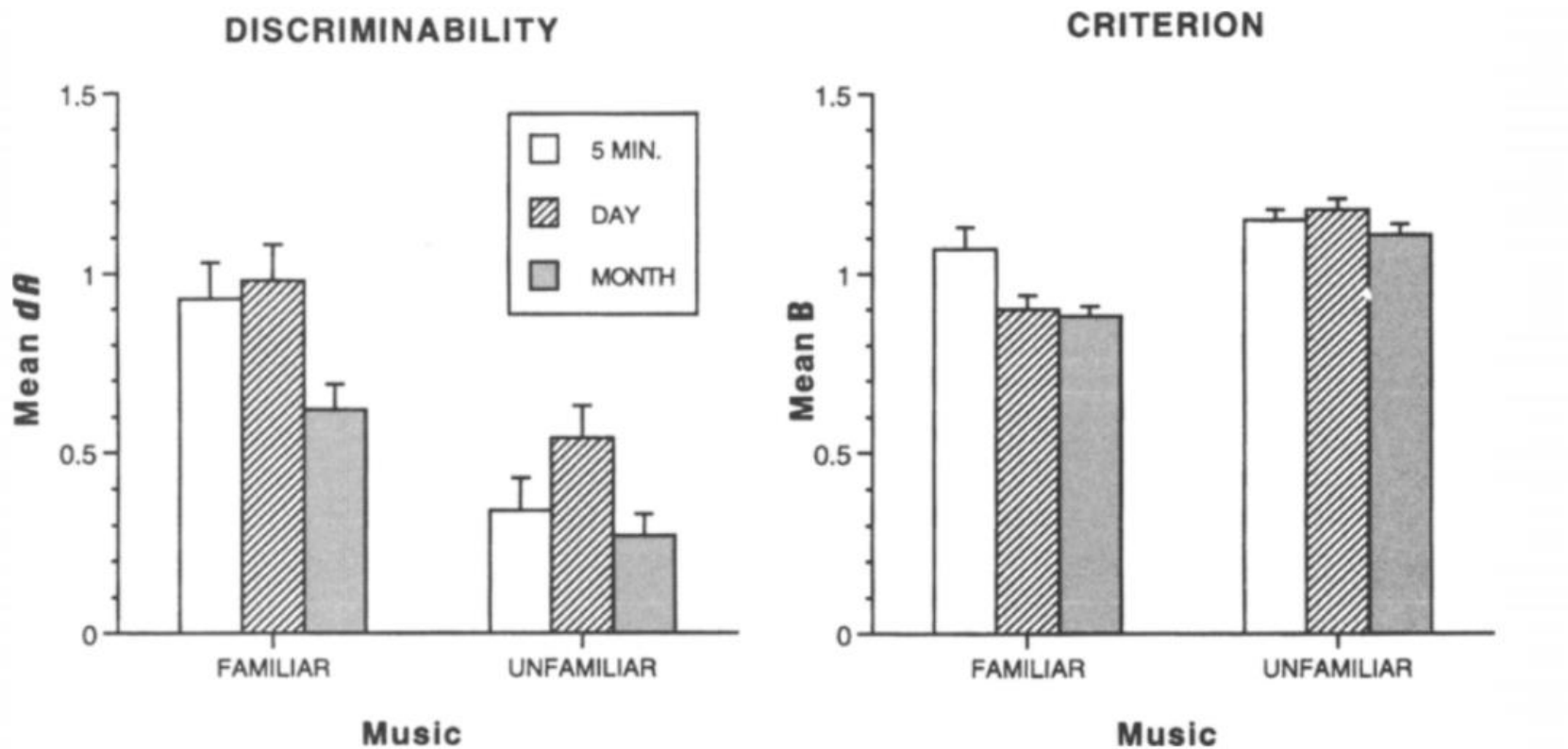

Figure 2. Discriminability (left panel) and criterion measures (right panel) for the familiar and unfamiliar musical excerpts, derived from the recognition ratings obtained at each delay (5 min, 1 day, and 1 month) between study and test in Experiment 2. Error bars represent standard errors.