



Brief article

# Similarity and attraction effects in episodic memory judgments <sup>☆</sup>

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## Abstract

In the decision-making literature, it is known that preferences between two options can be influenced in different ways by the introduction of a third option. We investigated whether such influences could be demonstrated when making decisions about qualitative aspects of episodic memories. In a baseline condition, participants were asked which of two dissimilar events they remembered more vividly: (A) a well-known Olympic victory, or (B) the death of a well-known public figure. In two further conditions, a third event was added: (C) an Olympic victory similar and competitive to A, or (D) an Olympic victory similar but inferior to A. With the addition of C, participants were less likely to choose A than B (similarity effect), whereas with the addition of D, they were more likely to choose A than B (attraction effect), suggesting that effects known in decision-making can be generalised to relative judgments about episodic memories.

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**Keywords:** Similarity effect; Attraction effect; Episodic memory; Vividness

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## 1. Introduction

Although there are demonstrations that the contents of memory can be altered in systematic ways (e.g., Bartlett, 1932; Loftus, Miller, & Burns, 1978; Wade, Garry, Read, & Lindsay, 2002), it is generally assumed that memory recall is reliable (Neisser, 1988) and that qualitative aspects of episodic memories can be meaningfully used in reaching decisions about past events. For example, mock jurors are more influenced by eyewitness testimonies that contain a greater degree of detail (Bell & Loftus, 1988); attributes such as sensory and contextual detail can help to distinguish between memory for performing an action and memory for the intention to perform that action (see Johnson & Raye, 1981, on reality monitoring); and memory strength contributes to the dating of events such that stronger traces are judged to be more recent than weaker ones (Hinrichs, 1970; Hintzman, 2005). The aim of the present article is to show that such decisions about qualitative aspects of episodic memories can be influenced by the available options (i.e., context) in a manner that resembles previous demonstrations in the decision-making literature (see Roe, Busemeyer, & Townsend, 2001, for a summary).

Consider the case of two very different airline tickets between which customers are approximately equally divided in their preferences: A is a cheap flight requiring four stops, whereas B is an expensive nonstop flight. The introduction of a third option, C, that is similar and competitive to A in being even cheaper but requiring five stops, reduces the probability that A will be chosen relative to B (Burton & Zinkhan, 1987; Tversky, 1972). Thus, C steals more from the similar than from the dissimilar option, a result termed the *similarity effect*. In contrast, the introduction of a third option, D, that is similar to, but dominated by, A in being both more expensive and requiring five stops, increases the probability that A will be chosen relative to B (Bhargava, Kim, & Srivastava, 2000; Huber, Payne, & Puto, 1982; Wedell, 1991), termed the asymmetric dominance or *attraction effect*. These effects violate the preferential choice properties of, respectively, the *independence of irrelevant alternatives* and the *regularity principle* (which states that the probability of choosing an option should not be increased by the addition of a new option) and thereby challenge traditional models of probabilistic choice (e.g., Luce, 1959; Thurstone, 1959; Tversky, 1972). However, more recent theories have been proposed that can successfully account for both effects (e.g., Roe et al., 2001; Usher & McClelland, 2004).

Can similarity and attraction effects be generalised to a different domain, namely, episodic memory? We asked participants to decide which of two (A/B) or three (A/B/C; A/B/D) familiar public events they remembered most vividly. The events A–D were designed to correspond with the options already described so that the ABC condition was predicted to result in a similarity effect in comparison with the AB (baseline) condition, whereas the ABD condition was predicted to result in an attraction effect relative to baseline. Thus, overall, the proportion of participants choosing A rather than B was predicted to be lower in the ABC (similarity) condition than in the ABD (attraction) condition.

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