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# Consciousness and Cognition

journal homepage: [www.elsevier.com/locate/concog](http://www.elsevier.com/locate/concog)

## The informative value of type of repetition: Perceptual and conceptual fluency influences on judgments of truth

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### ARTICLE INFO

#### Article history:

Received 7 October 2015

Revised 14 December 2016

Accepted 26 February 2017

Available online 10 March 2017

#### Keywords:

Truth effect

Repetition

Perceptual fluency

Conceptual fluency

Recognition

### ABSTRACT

We contrast the effects of conceptual and perceptual fluency resulting from repetition in the truth effect. In Experiment 1, participants judged either verbatim or paraphrased repetitions, which reduce perceptual similarity to original statements. Judgments were made either immediately after the first exposure to the statements or after one week. Illusions of truth emerged for both types of repetition, with delay reducing both effects. In Experiment 2, participants judged verbatim and paraphrased repetitions with either the same or a contradictory meaning of original statements. In immediate judgments, illusions of truth emerged for repetitions with the same meaning and illusions of falseness for contradictory repetitions. In the delayed session, the illusion of falseness disappeared for contradictory statements. Results are discussed in terms of the contributions of recollection of stimulus details and of perceptual and conceptual fluency to illusions of truth at different time intervals and judgmental context conditions.

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## 1. Introduction

The “illusion of truth effect” refers to the observation that statements that are repeated are considered more probably true and more valid than new statements. Hasher, Goldstein, and Toppino (1977) were the first to empirically demonstrate this effect, which has been repeatedly replicated in different settings and with different materials (for a meta-analysis see Dechêne, Stahl, Hansen, & Wänke, 2010).

Four kinds of repetitions can be used in conducting studies on the illusion of truth. (1) The majority of experiments that illustrate this effect have used verbatim repetition of the statements. That is, participants evaluate the truth of exactly the same items they were previously exposed to. However, to capture the processes underlying evaluations of truth, some empirical approaches made changes to the statements in the judgment phase. The following changes are of particular relevance for that purpose, yielding three further kinds of repeated statements: (2) changes to the wording of the statements while maintaining their meaning (i.e., paraphrases), (3) changes to the meaning of the statements while maintaining most of their wording and topic (i.e., contradictory statements), and (4) changes in both the wording and the meaning of the statements, while maintaining their topic (i.e., contradictory paraphrases).

In this paper we present two experiments that compare truth judgments of repeated verbatim statements with these kinds of changes to better understand how the conceptual and perceptual fluency associated with the different kinds of

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repetition contribute and interact to create repetition-based illusions of truth. Throughout the manuscript we make the distinction between repetition of the *meaning* of a statement, which is the specific and exact details of a statement's semantic content, and repetition of its *topic*, which includes the general theme but not its exact details (e.g., [Begg, Armour, & Kerr, 1985](#)).

In addition to type of repetition, we manipulated the delay between the first exposure to the statements and the truth evaluations. With this manipulation we attempted to test how conceptual and perceptual fluency associated with the different types of repetition contribute to the effect when: (1) truth judgments are more likely to be based on the conscious recollection of the details of the original statements, versus when (2) truth judgments are more likely to be based on the familiarity associated with fluent processing of repeated stimuli (e.g., [Begg, Anas, & Farinacci, 1992](#); see also [Jacoby & Dallas, 1981](#); [Tulving, Schacter, & Stark, 1982](#); [Whittlesea, 1993](#), for effects of familiarity).

## 2. Processes underlying repetition effects on truth judgments

### 2.1. Familiarity

The literature suggests that the illusion of truth effect is closely related to the feeling of familiarity elicited by repeated statements in comparison to new ones. That is, simply remembering (even if falsely) that we have heard or read a statement beforehand will influence how we judge its validity. One reason for why this may occur is that when we recognize a statement we may also recall information about its epistemic value (whether it was presented as true or false) and confer referential validity on it (e.g., [Brown & Nix, 1996](#)). The fact that we remember having heard a statement before may also signal that different sources agree on it, conveying convergent validity on it ([Arkes, Boehm, & Xu, 1991](#); [Arkes, Hackett, & Boehm, 1989](#)). Accordingly, [Begg and Armour \(1991\)](#) showed that statements judged as old were evaluated as true whether they were repetitions that participants correctly remembered or new statements that they mistook for repetitions. Furthermore, old statements that were forgotten were evaluated just as true as new statements correctly identified as such. This evidence suggests that perceived familiarity is more important for illusions of truth than the real repetition status of the statements (see also [Bacon, 1979](#); [Boehm, 1994](#)).

### 2.2. Processing fluency

The impact of familiarity on judgments of truth seems to be anchored in the fluent processing of repeated items (e.g., [Begg et al., 1992](#)). Repeated stimuli increase processing fluency (e.g., [Jacoby & Dallas, 1981](#)), and just as fluency influences judgments that one has seen a stimulus before (e.g., [Jacoby & Whitehouse, 1989](#)), it also influences judgments that a stimulus is true. In line with this argument, individuals evaluate statements as more probably true simply because they are presented in high as compared to low visual contrast (e.g., [R. Reber & Schwarz, 1999](#)) or in an easy as compared to difficult letter font (e.g., [Parks & Toth, 2006](#)). Similarly, aphorisms are perceived as more probably true when presented in a rhyming (e.g., “Birds of a feather flock together”) rather than a non-rhyming form (e.g., “Birds of a feather flock conjointly”, [McGlone & Tofiqbakhsh, 2000](#)). Relatedly, semantically primed words (i.e., words that are preceded by related concepts) are judged as better answers to trivia questions than words that are not primed ([Kelley & Lindsay, 1993](#)).

The fluency involved in the processing of a repeated statement can come from the repetition of its perceptual features – perceptual fluency, and/or the repetition of its conceptual characteristics – conceptual fluency (for a classification of different types of fluency, see [Alter & Oppenheimer, 2009](#)). Previous exposure induces perceptual fluency due to the creation of a feature-based representation of the stimulus (visual, auditory, pictorial), which supposedly facilitates the encoding and processing of the statement when encountered again ([Jacoby & Dallas, 1981](#); [Shapiro, 1999](#)). But through repetition individuals also learn about the structural properties of statements (e.g., grammars), which facilitate their subsequent processing ([Buchner, 1994](#); [Reber, 1967](#)). Thus, even if a statement differs from a previous one but has a similar structure, individuals may experience increased fluency (for a similar argument, see [Reber & Unkelbach, 2010](#)). Conceptual fluency occurs because previous exposure creates a meaning-based representation that facilitates encoding, processing, and retrieval in future encounters ([Shapiro, 1999](#); [Whittlesea, 1993](#)). This type of fluency can come from the activation of the meaning of the statement, or of a more general knowledge structure, such as its theme or topic. Given the convergence of effects that fluency exerts in a variety of judgments (see [Alter & Oppenheimer, 2009](#)), the power of repetition in consistently promoting illusions of truth is not surprising – repetition might simply aggregate different sources of perceptual and conceptual fluency.

## 3. Types of repetition

Research has focused on different types of repetition in order to better understand the mechanisms underlying the truth effect. Although illusions of truth have mostly been associated with verbatim repetition, this is not a necessary condition to observe the effect. Illusions of truth are expected to occur if a target statement is sufficiently similar (perceptually or conceptually) to a previously presented one, facilitating its processing.

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