

# Lack of precision, misleading implications, and ethical issues arising from the use of the label "false memory" for errors in word memory.

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## Introduction

- The term "false memory" has been used to refer to suggestibility experiments in which whole events are apparently confabulated and in media accounts of contested memories of childhood abuse.
- Since 1992, psychologists have increasingly used the term "false memory" when discussing memory errors for details, such as specific words within word lists.
- Use of the term to refer to errors in details is a shift in language away from other terms used historically (e.g., "memory intrusions").
- We empirically examine this shift in language and discuss implications of the new use of the term "false memory".

### Historical Use of the Term "False Memory"

- The term "false memory" initially gained prominence in reference to contested memories of sexual abuse.
- Between 1992 and 1994, the media began to use the term "false memory" to focus on the inaccuracy of memories for abuse and the effects of false allegations of childhood sexual abuse on families wrongly accused. Article titles such as "You Must Remember This: How the Brain Forms False Memories" reflect this media frame (Beckett, 1996, p. 12).
- In the 1990's, the term "false memory" was introduced to the cognitive literature.

### New Term for an Old Phenomenon: The Deese Paradigm

- Deese (1959) demonstrated that one form of memory error – intrusion – occurs in recall in predictable ways.
- Participants in studied lists of related words (e.g. sandal, foot, toe, slipper, in which at least one prototypical word (e.g. shoe) was not presented.
- Participants frequently included the related-but-not-presented word (e.g. shoe) when asked to recall the list.
- Deese (1959) referred to this specific type of memory error as an "intrusion". The paradigm was designed specifically to elicit a specific type of memory error: intrusions of words that were related to a list of words presented in the laboratory.
- Deese's now classic study was not well cited and did not raise much attention at the time.

### Re-discovering the Deese Paradigm

- In 1995, Roediger and McDermott reported on a new experiment that employed Deese's (1959) paradigm, but used new terminology to discuss the results.
- Participants were asked to learn a list of words (e.g., bed, night, tired) and later tested for their memory of a related, but not presented, item (e.g., sleep). Consistent with Deese (1959), participants did sometimes misremember the related, but not presented, item "sleep" as having occurred in the list studied.
- Roediger and McDermott (1995) characterized this error as a "false memory" whereas Deese (1959) called this an "intrusion."
- Since the publication of the Roediger and McDermott (1995) article, follow-up articles using similar paradigms have continued to use the term "false memory" in their titles and discussions (e.g., Roediger & McDermott, 1999; Miller & Wolford, 1999).

### Other Uses of the Term "False Memory"

- Non-empirical. Term is used to refer to the complexity and accuracy of memories for whole events (such as abuse).
- Suggestibility research. Term is used to refer to the apparent confabulations of entire events never actually experienced, but that were suggested in a laboratory task.
- We are not critiquing the use of the term "false memories" for suggestibility or confabulation research in which whole memories for entire events are allegedly implanted (however, for critical reviews of such studies, see Carstensen et al., 1993; Freyd, 1998; Gleaves & Freyd, 1997; Pope, 1996, 1997).

### Current Study

- We sought to assess the frequency of the use of the term "false memory" to refer to errors in details. The term's frequency in empirical and non-empirical papers, and how the term was used was assessed to determine the extent of the generalization of the term.

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For related research, please visit <http://www.du.edu/~adeprinc/lab.html> or <http://dynamic.uoregon.edu/~jff/sts04/>.

## Method

### Procedure

- A PsychInfo search of title and abstract fields for journal articles using the keywords "false memory" and "false memories" was conducted for the time period 1992 to August 2003
- Editorials, commentaries, responses to other articles, book reviews, and errata were excluded, resulting in 374 articles.
- To confirm that none were overlooked, a search of articles citing the inaugural Roediger and McDermott (1995) study of recall and recognition errors during the period of 1996 to August 2003 was conducted using Web of Science. This resulted in the detection of an additional 16 articles, increasing the total number to 390.
- Journal articles obtained from the literature search were rated on two dimensions. First, abstracts were rated as either empirical (including experiments, meta-analyses of experiments, and case studies) or non-empirical. Second, abstracts that used the term "false memory/ies" to refer to errors in details were identified.

## Coding Criteria

- Abstracts using the term "false memory/ies" to refer to errors in details were identified based on the following criteria:

- When the term referred to errors in recall for details or parts of events. For example, experiments in which participants erroneously recalled a word not previously presented in a list of related words (e.g., misremembering "bed" when sleep-related words had been presented) or experiments in which participants erroneously recalled a detail within more complex stimuli (e.g., when shown a video of a store robbery, the participant erroneously recalled that the robber had her hands in her pockets at a certain point in the video).
  - When the term referred to errors in recognition for details or parts of events. For example, experiments in which participants erroneously recognized an item that had not been previously presented in any sensory modality (e.g., pictures of objects, spoken words).
- Articles that did not use the term "false memory/ies" to refer to errors in details involved suggestibility for, or confabulation of, entire events. These articles described reports of memories for entire events that did not occur, and not just parts or peripheral details of events.
  - Articles using the term "false memory/ies" to refer both to errors in details and confabulation were included in the error in details tally.

## Inter-Rater Reliability

- Discrepant ratings between coders initially occurred in 28 of the 390 articles. These discrepancies were for 28 term usage ratings and 7 empirical status ratings.
- For the term usage rating, an initial 92.8% agreement and high interrater reliability, Cohen's  $\kappa$  (1, N = 390) = .85,  $p < .001$ , was achieved.
- Coders reviewed and discussed the articles for which there were initial discrepancies and agreement was reached through consensus for a majority of them.
- The final ratings matched for all but five of the articles, on which raters disagreed only in the term usage dimension, resulting in 98.7% agreement and excellent interrater reliability, Cohen's  $\kappa$  (1, N = 390) = .97,  $p < .001$ .

## Results

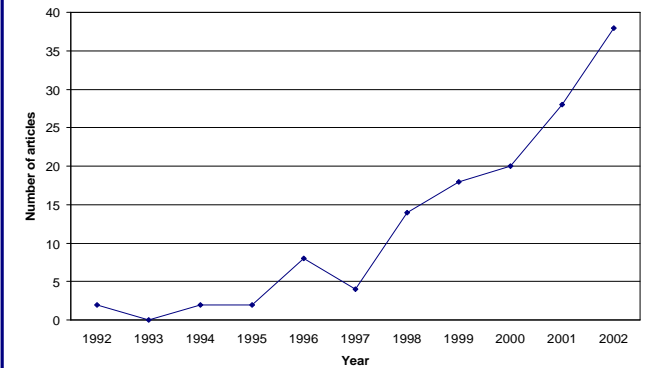
- Of the 397 articles collected, 219 (56.2%) were empirical reports.
- Approximately 70% of the empirical articles used the term "false memory/ies" to refer to error in detail.
- The majority of non-empirical papers (88%) used the term to refer to confabulation of an entire event.
- The majority of research articles that used the term "false memory" to refer to errors in details were based on the Deese, Roediger and McDermott (DRM) paradigm, in which participants incorrectly recall or recognize having read a word from a previously presented list.

Table 1. Articles Rated by Type and Use of the Term "False Memory/ies"

Term used to refer to errors in details	Article type	
	Empirical	Non-empirical
Yes	153	21
No	66*	150

\* Eighteen research articles that did not use the term to describe errors in details were not aimed at creating false memories, but studied factors thought to be related to false memories (such as hypnotizability).

Figure 1. Number of articles per year (1992-2002) that used the term "false memory/ies" to refer to memory errors in details or parts of events in laboratory experiments.



## Discussion

### Effects of term use on theory development

- Errors in word learning (in which words similar to study words are incorrectly remembered) may or may not have much to do with confabulation of life events; however, the assumptions implicit in the language used have inhibited a thorough comparison of these phenomena.
- Thus, use of "false memory" to refer to distinct phenomena (i.e., word learning errors and confabulations of life events) weakens theory development.
- Many questions about memory errors remain unsolved and we applaud research in this area. With the use of more precise and differentiated terminology for specific types of memory errors, theory development will thrive.

### Conflating politics and science: Problems with the current use of "false memory" in cognitive tasks

- The new use of the phrase tacitly supports the notion that research on errors in word memory upholds a claim that false memories for traumatic events can be implanted into memory.

### Ethical responsibility in data interpretation and use of scientific authority

- Scientists are awarded tremendous authority to define the scope of knowledge in any given field. With this authority comes both privilege and responsibility.
- Among the many ethical responsibilities facing scientists is the fair interpretation and representation of data to both colleagues and the public.
- The language chosen by researchers to describe, interpret and generalize findings sets the context for interpretation by other researchers, the media and the public.
- In the specific case of the use of the term "false memory" to describe errors in details in laboratory tasks (e.g., in word-learning tasks), the media and public are set up all too easily to interpret such research as relevant to "false memories" of abuse because the term is used in the public domain to refer to contested memories of abuse.

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