Introduction

- The Moses Illusion (Erickson & Mattson, 1981) is an example of knowledge neglect, a robust failure to use semantic memory to detect errors in questions.
- In other paradigms, knowledge neglect compromises performance on later tests of general knowledge.
- Several manipulations affect error detection in the Moses Illusion, including the semantic relatedness of the impostor word and syntactic focus.
- A review of the literature indicated a significant positive correlation across experiments between the frequency of distorted questions and the rate of error detection. This relationship has not been tested.
- The purposes of the present experiments were to examine the effects of the frequency of distorted questions and task length on error detection in the Moses Illusion and to explore the memorial consequences of exposure to misinformation.

Experiment 1 Methods

1. Anomaly Detection Phase
- 60 critical questions
  - 20 undistorted: When did the Japanese bomb the American naval base Pearl Harbor?
  - 20 distorted: When did the Germans bomb the American naval base Pearl Harbor?
  - 20 not read
- Low error frequency: 40 fillers (80 total questions)
- High error frequency: 0 fillers (40 total questions)
- Instructions: Answer, Respond “wrong” if question is distorted, or “Don’t know”

2. Cued Recall Test
- 30 questions corresponding to 10 presented in undistorted format in Anomaly Detection Phase, 10 presented in distorted format, and 10 not presented
- What country bombed the American naval base Pearl Harbor?

3. Knowledge Check
- All 60 critical items tested in multiple-choice format with 3 alternatives: correct, misleading lure, and “Don’t know”
- What country bombed the American naval base Pearl Harbor? - Germany - Japan - Don’t know

Experiment 1 Results

- Error Detection is Better When Errors are More Frequent
- Reproduction of Question Distortions on Later Tests

Experiment 2 Methods

1. Anomaly Detection Phase
- 80 total questions in all conditions
- Low error frequency
  - 60 critical items (20 undistorted, 20 distorted, 20 not read) and 40 filler questions
- High error frequency
  - 120 critical items (40 undistorted, 40 distorted, 40 not read) and 0 filler questions

2. Cued Recall Test
- 60 questions corresponding to half of those presented in undistorted format in Anomaly Detection Phase, half presented in distorted format, and half not presented
- Length of test and proportion of questions that had been tested previously in the experiment were controlled

Experiment 2 Results

- Error Frequency Has No Effect on Error Detection when Test Length is Controlled
- Reproduction of Question Distortions on Later Tests

Discussion

- Participants fail to detect errors in questions despite attempts to increase error salience.
- Increasing the frequency of errors improves error detection.
- Controlling for test length eliminates this effect.
- Exposure to errors in questions compromises performance on later tests.

References


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