

CORE STUDY #3: LANEY ET AL. 2008 (FALSE MEMORY)

Background

In a study by Braun et al. (2002), it was revealed that implanting false memories could be achieved by convincing individuals that they had encountered Bugs Bunny at Disneyland. Additionally, Bernstein et al. (2005) demonstrated the repercussions of memory alteration through the implantation of false memories related to participants falling ill after consuming pickles or eggs, which influenced their future food preferences. Laney et al. aimed to explore whether implanting positive memories could yield positive outcomes.

Questionnaires

1. **Food History Inventory (FHI):** Participants rated 24 items on a scale from 1 to 8, reflecting their confidence in the occurrence of specific events, such as their initial enjoyment of asparagus. (1 = definitely did not happen; 8 = definitely did happen).
2. **Restaurant Questionnaire (RQ):** Participants evaluated 32 dishes presented in a menu-like format across five courses, indicating their likelihood to order each dish for dinner, irrespective of price.
3. **Food Preference Questionnaire (FPQ):** Participants rated 62 items based on their preference for consuming each item.
4. **Food Cost Questionnaire (FCQ):** Participants specified their readiness to pay from multiple pricing options or selected 'would never buy.'
5. **Memory or Belief Questionnaire (MBQ):** Participants indicated, for three items from the FHI, whether they had a memory or experience and described it as a detailed memory, vague belief, or confirmed non-occurrence.

Experiment 1

Aim

- To assess whether providing participants with false feedback about their childhood love for eating asparagus would lead to the formation of false memories or beliefs.

Method

Participants

- A total of 128 participants (99 females, 29 males) were recruited through volunteer sampling from the University of California
- The average age of participants was 20.8
- They received course credit for their participation

Design

- Laboratory experiment
- Featured a restaurant questionnaire formatted like a menu to mimic real-life decision-making scenarios
- Independent measures design
- Participants placed into either the 'love' or 'control' condition
- Independent variable: whether participants acquired a false belief regarding eat asparagus after receiving false feedback
- Dependent variable: responses to the self-report questionnaires

Procedure

- Week One:
 - L Participants were grouped in eights and led to believe they were part of a study on 'food preferences and personality' to minimize potential demand characteristics and social desirability bias.
 - L During this initial week, five questionnaires were administered, which included the Food History Inventory (FHI), Restaurant Questionnaire (RQ), Personality measure, Social desirability, and Eating Habits.
 - L The last three questionnaires were used as distractors to conceal the true aim of the study.
- Week Two:
 - L Participants were randomly assigned to either the 'love' or 'control' conditions.
 - L Participants received reports detailing their childhood experiences based on their responses to the initial questionnaires.
 - L Those in the 'love' condition received a critical statement in their report, asserting that 'you loved to eat cooked asparagus,' while the control group received three non-crucial filler items in their reports.
 - L Subsequently, participants were probed regarding the content of these profiles to ensure they had absorbed the feedback.
 - L Following this confirmation, participants completed the Food History Inventory (FHI) and Restaurant Questionnaire (RQ) to assess changes in their responses.
 - L In addition to these questionnaires, participants also completed the Food Preference Questionnaire (FPQ), Food Cost Questionnaire (FCQ), and Memory or Belief Questionnaire (MBQ).

Results

- Whether false beliefs related to asparagus consumption were established.
 - Whether these beliefs had discernible consequences.
- For the 'love' group (n=46), FHI responses saw an average increase of 2.6 points, whereas the control group's responses (n=51) experienced a marginal rise of 0.2 points.
 - 31 participants were excluded from the results as they believed they loved asparagus and rated it 5 or higher on the FHI.
 - Distinguishing between memory (the ability to recall specific events in detail) and belief (a less detailed retrieval of an event), it was evident that the 'Love' group had a higher likelihood of generating false memories or beliefs. Among believers, there was a consistent pattern:
 - Low initial FHI rating for loving asparagus in week one.
 - A substantial increase in the FHI rating in week two.
 - A positive 'memory' or 'belief' reported on the MBQ.
 - 48% of participants in the 'love' condition were identified as believers (22 participants), with an average FHI increase of 4.5 points from week 1 to week 2. 10 of these participants had a memory, while twelve had a belief.

| Experiment 1 Food History Inventory | | |
|-------------------------------------|--------|--------|
| | Week 1 | Week 2 |
| Love (46) | 1.5 | 4.1 |
| Control (51) | 1.5 | 1.7 |

| Experiment 1 Memory or Belief Questionnaire | | | | |
|---|------------------|------------|----------|--------------|
| | Memory or belief | | | Not the case |
| | Memory (M) | Belief (B) | M or B | |
| Love (46) | 22% (10) | 35% (16) | 57% (26) | 43% (20) |
| Control (51) | 12% (6) | 27% (14) | 39% (20) | 61% (31) |

Conclusions

- Positive false memories could indeed be implanted, and these false beliefs could exert a considerable influence on behaviour and food preferences. The effects of false beliefs included heightened ratings for loving asparagus, increased willingness to spend on asparagus, intent to consume it in the future, and a stronger preference for asparagus.

Experiment 2

Aim

- To investigate the potential underlying mechanisms of false memory consequences and to replicate the findings of the first experiment for reliability.

Method

Participants

- 103 undergraduate students from the University of Washington who received course credit.
- 64 were females, and 39 were males
- Average age of 19.9.
- The 'love' group comprised 58 participants
- The 'control' group had 45 participants

Design

- Laboratory experiment
- Independent measures design
- Independent variable: whether participants held a false belief
- Dependent variable: responses to four questionnaires and a slideshow

Procedure

Unlike Experiment 1, no deception or cover story was utilized in Experiment 2.

- Week One:
 - Participants completed the FHI, RQ, FPQ, PM, and SDS, largely mirroring the procedure of the initial experiment.
- Week Two:
 - Participants were randomly assigned to the 'love' or 'control' condition.
 - The 'Love' group received feedback stating, "You loved asparagus the first time you ate it."
 - 'Love' group participants were prompted to provide details about their memory of eating asparagus. Those who couldn't recall were asked to speculate.
 - The control group did not engage in the memory recall process.
 - All participants were questioned about their most significant food-related childhood event, not covered in the food profile.

- Additionally, participants:
 - ↳ Viewed a slideshow with 20 photos, each displayed for 30 seconds.
 - ↳ Rated photos on a scale of 1 to 8, considering factors like appetizing or disgusting qualities, artistic quality, and photographer expertise.
 - ↳ Following the slideshow, participants completed the FHI, RQ, FPQ, and MBQ.
 - ↳ Received a full debriefing.

Results

In the 'love' group (n=40), FHI responses experienced an average increase of 2.5 points, while the control group (n=33) exhibited a smaller increase of 1.0 points. Thirty participants were excluded from the analysis.

Similar to Experiment 1, participants informed that they loved asparagus had a higher likelihood of generating false memories or beliefs, with 40 participants identified as believers. However, on the RQ, neither believers nor non-believers displayed an increased desire to consume asparagus. On the FPQ, believers expressed a greater inclination to consume asparagus. In the photo ratings, believers assessed asparagus as more appetizing and less repulsive than non-believers.

These findings provide additional insight into the mechanisms of false memory consequences and the impact on food preferences.

| Experiment 2 Food History Inventory | | |
|-------------------------------------|--------|--------|
| | Week 1 | Week 2 |
| Love (40) | 1.7 | 4.2 |
| Control (33) | 1.5 | 2.5 |

| Experiment 2 Memory or Belief Questionnaire | | | | |
|---|------------------|------------|----------|--------------|
| | Memory or belief | | | Not the case |
| | Memory (M) | Belief (B) | M or B | |
| Love (40) | 28% (11) | 28% (11) | 57% (22) | 45% (18) |
| Control (32) | 6% (2) | 38% (12) | 39% (14) | 56% (18) |

Conclusions

- False positive food beliefs can be imparted to participants, and these convictions yield repercussions on their conduct, culinary inclinations, and recollections concerning food. Those who hold these beliefs exhibit a greater tendency to rate asparagus as more appealing and less repugnant.
- The cognitive process of forming false memories among participants was the pivotal factor behind their more favourable assessment of the depicted images, primarily attributable to familiarity or heightened fluency.

Evaluation

A strength of this study is that it is highly replicable. This is because it was conducted in a controlled laboratory environment with standardized procedures such as using the same questionnaires and test schedule for each participant. This means another researcher can simply get another group of participants, repeat the procedure exactly and compare and test the results for accuracy. This allows the findings of the study to be tested, therefore increasing the validity of the study.

Another strength of this study is that it is reliable. This is because the study was done with a standardized procedure which decreased demand characteristics which increased the reliability of the study. In Experiment 1, filler questionnaires like the personality measure and social desirability questionnaires were used to hide the true aim of the study. This increases the validity of the study.

A weakness of this study is that it lacks ecological validity. This is because the study was conducted in a laboratory environment with a standardized procedure. Even though the questionnaire was formatted in the same way as a restaurant menu, ordering in a restaurant and completing a questionnaire are very different, therefore the study lacks ecological validity. This reduces the overall validity of the experiment.

Another weakness of this study is that it is a snapshot study as opposed to a longitudinal study. This is because it assesses the formation of false memories and their persistence for up to two weeks, but it does not follow the participants over time to see how long these false memories last and whether or not they change over time.

Issues and Debates

- **Application to Daily Life:** Laney and his team demonstrated the potential to influence people's perceptions of asparagus through the dissemination of inaccurate information. This manipulation can serve as a valuable tool for facilitating dietary changes and promoting healthier eating habits. This research has been instrumental in assisting parents in cultivating new eating habits in their selective-eating children by reminiscing about their prior enjoyment of the disliked food.
- **Individual vs. Situational:** The environmental impact of Laney's disclosure to the experimental group, where they supposedly adored asparagus in childhood, can lead individuals to form the belief that they did indeed have an affection for the vegetable. This underscores the substantial influence of situational information on subsequent behaviour. However, individual variations were evident, as some participants in the control group exhibited a liking for asparagus, while certain individuals in the 'love' condition remained unconvinced about their childhood fondness for asparagus.