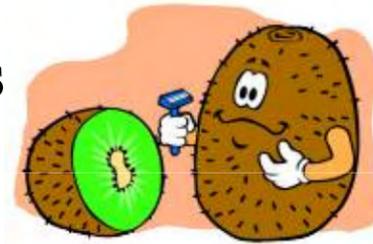


The Effect of Imagination Inflation on Memory for Recently Performed Actions

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Abstract

Imagining an event has been found to increase the probability of falsely remembering it (Garry & Polaschek, 2000). The current study investigated the effects of a shortened retention interval and warnings on this imagination inflation. Ninety participants first either enacted or imagined a set of phrases, then imagined either old or new phrases, then were asked to indicate whether they had imagined, enacted or never heard a list of old and new phrases. Participants were randomly assigned to no warning, warnings before the imagination phase, or warnings before the memory test conditions. The retention interval was 30 minutes between each phase. Imagination inflation was found even with this shortened interval. Warnings did not reduce the inflation, and early warnings actually increased inflation.

Imagination Inflation

One method of memory distortion studied in the laboratory is imagination inflation – the amplified level of confidence that an event not experienced occurred as a function of imagining it. Garry, Manning, Loftus & Sherman (1996) reported that participants placed more confidence in events that never actually occurred if they had imagined these events.

Mechanisms

Two mechanisms have been suggested to explain imagination inflation: source confusion and familiarity (Garry & Polaschek, 2000). In Source Confusion, sensory details are misattributed to actual experience rather than imagination (Henkel, Franklin & Johnson, 2000). On the other hand, imagination inflation may also be due to a misinterpretation of a global feeling of familiarity (Garry et al., 1996).

Bizarreness

Pezdek & Hodge (1999) found that children were significantly more likely to believe a plausible experience (i.e. being lost in a mall) had happened to them than an implausible experience (i.e. receiving an enema). On the other hand, Worthen & Wood (2001) and Thomas & Loftus (2002) found that bizarre events may be more susceptible to imagination inflation. These last two studies used retention intervals of at least 24 hours. At this point it is unclear what effect bizarreness would have on imagination inflation over shorter intervals.

Warnings

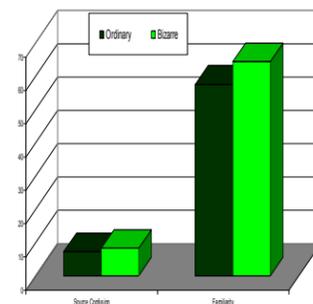
Niedzwinska & Krakow (2000) and Landau & Von Glahn (2004) found that providing a warning a week or two after an imagination exercise and just before a memory test reduced the effects of imagination inflation.

Hypotheses
Participants will:

1. falsely recall more actions they imagined than those they did not imagine.
2. There will be imagination inflation for common but not bizarre phrases
3. Warnings will

Bizarreness and Imagination Inflation

Surprisingly, bizarreness did not reduce imagination inflation in either the source confusion or familiarity conditions.



Method

Participants

Ninety undergraduates at a small private college in Northern California

Materials

- Thirty-six action phrases adapted from Knopf (1991): 18 common (“Peeling an orange”) and 18 bizarre (“Shaving a kiwi”).
- Recognition test: 12 common phrases presented in Phase 1, 12 bizarre phrases presented in Phase 1, and 12 new phrases.

Procedure

Random assignment to 3 conditions: warning before imagination in Phase 2, warning before the recognition test in Phase 3, and no warning.

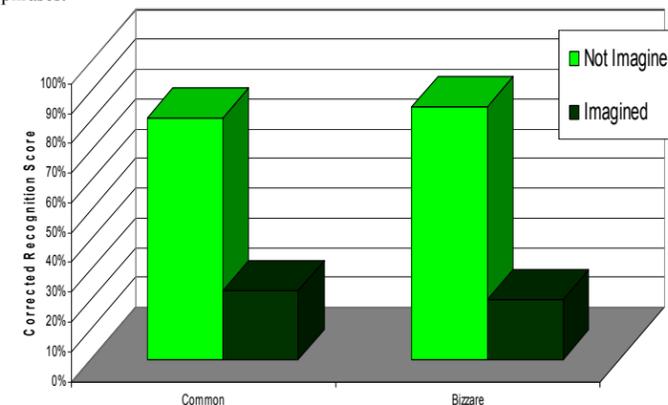
Phase 1: Read 24 action phrases, 12 to imagine and 12 to enact.

Phase 2: After a 30 minute interval participants were read 18 different phrases to imagine elaborately (each repeated 3 times). Six had been enacted in Phase 1, six imagined in Phase 1, and six were new.

Phase 3: After another 30-minute interval, participants completed the recognition test.

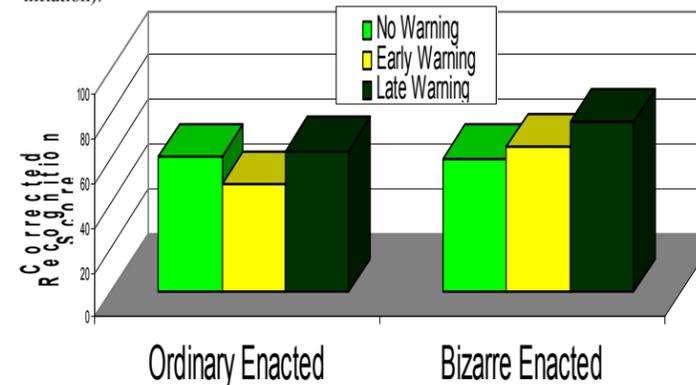
Imagination Inflation: Familiarity

Imagining a phrase in Phase 2 reduced its corrected recognition score, indicating the effect of imagination inflation. This was true for both common and bizarre phrases.



Warnings and Imagination Inflation

Surprisingly, warnings did not reduce imagination inflation in either the Familiarity conditions (shown below) or Source Confusion (where early warnings increased inflation).



Discussion

Imagination Inflation and Retention Interval

We found evidence for both kinds of imagination inflation – source confusion and familiarity. This supports the power of imagination inflation, as it can create false memories over the relatively short time interval of 30 minutes used in this study.

Bizarreness

Contrary to our hypothesis, we found no difference in imagination inflation for common and bizarre phrases. It may be that over short retention intervals bizarreness is not sufficient to prevent either familiarity or source confusion from forming false memories.

Warning

The warning results were unexpected, and difficult to explain. While we had predicted that warnings would reduce the imagination inflation effect, they actually had either no effect, or, in one condition (early warnings for source confusion) actually increased the effect. We suspect that the rather complicated wording of the warning may have led to some misunderstanding. Participants may have misunderstood the warning, leading them to say “enacted” whenever an action felt vaguely familiar. This would have artificially increased the imagination effect.

Summary

Our data supports the view that memories are fragile things that are easy to manipulate, even over short time periods. Our findings about warnings imply that just because people are aware of the malleability of memory does not mean that they are less likely to make mistakes, particularly when the warnings are confusing and unclear.