Suspected Deception Impairs Interpersonal Reality Monitoring

Katherine Pfannes   Theodore Bratton   Kacie Mennie   Christopher Draheim   Arlo Clark-Foos, Ph. D

Introduction

Frequently, we hear memories that seem too far-fetched to be accurate or too vague to be real. In response, we automatically evaluate the origin of someone else's memories; a process known as interpersonal reality monitoring (IRM). Specifically, we attribute the source of other people's memories to either external (perceived) or internal (imagined) origin (Johnson, Bush, & Mitchell 1998). Often, these distinctions are not clear. Even within our own memories, thoughts and dreams can be confused with actual events. Moreover, stories we have heard can be incorporated into our own experiences. Nevertheless, reality monitoring (and IRM) research has identified myriad characteristics of memories that people use to make attributions (Johnson, Bush, & Mitchell 1998). First, there are semantic processes that evaluate how plausible a story appears and how consistent its information remains from telling to retelling. Second, there are heuristic processes that compare memories based on certain qualitative traits. For example, memories for perceived events tend to contain more sensory and contextual information such as where an event happened and what it looked like. In contrast, internally generated memories tend to contain more information on the cognitions involved during the event. Further differences include how much information is dedicated to emotion, externally generated memories being the more detailed. Overall, these differences (and others) are used to evaluate origin (Johnson, Bush, & Mitchell 1998).

The primary goal of the current research is to investigate IRM processes using a new procedure for generating other's memories. A second goal is to determine the accuracy of IRM when given different discrimination tasks. Specifically, does IRM accuracy differ between judging Real-Imagined verses True-Lie? In other words, what is the role of suspected deception in discriminating real from imagined memories? Intuitively, there is little difference between a lie and an imagined event, both being internally fabricated memories. However, a lie has the added dimension of deception. When giving a lie a person is intending to sound truthful, therefore, he or she may include details that are more typical of an externally perceived event. Consequently, it may be more difficult to discriminate a lie from a true event, as opposed to an imagined verses a true event.

Methods

To generate memories for real and imagined events, twenty participants were instructed to either watch a short video clip (2-3 min) or to imagine the same event for a controlled amount of time. In total, there were eight events participants either imagined or watched (*e.g.* person going to the dentist, boys playing soccer). Next, participants orally described their memories, making sure to indicate whether it was real or imagined. After transcribing these descriptions[1], the memories were presented to new participants. Half of the new participants were told the truthful account of how the memories were generated (*i.e.* participants formed the memories based on either watching a video or imagining a similar event), while others were told that the memories were based on true experiences or lies that participants were asked to tell. Seventy-four participants judged 32 memories (half from each origin), with half judging Real-Imagined and the remainder judging Truth-Lie.

[1]*It is also important to determine what details are present in real memories compared to those in imagined memories. Researchers have done some of this work but most has been speculative. The Human Learning and Creativity (HuLC) Lab at the University of Michigan – Dearborn has already analyzed the differences between the real and imagined memories we use in this study. The analyses of those differences can be found elsewhere at this conference (see Differences in Interpersonal Memories for Real and Imagined Events).*

EXPERIMENT INSRUCTIONS

Everyone
Today you will be participating in part two of an experiment that has already started. You should not, and in fact cannot, participate in this experiment if you participated in this first part of this study. To better understand the instructions for this study, please first read what happened in the initial part of the experiment.

Real - Imagined
You will not be seeing ALL of the original descriptions collected from those participants. Instead, you will be shown a random selection of descriptions that originated from either real or imagined events.
In this experiment, you will be judging the reality of these prior descriptions. When a description appears on the computer screen, you will make a judgment on whether the event being described was initially IMAGINED or SEEN. If you believe the event described was initially IMAGINED, press the key labeled IMAGINED with your LEFT INDEX FINGER. On the other hand if you believe the event being described was initially SEEN, press the key labeled SEEN with your RIGHT INDEX FINGER.
You will not be seeing ALL of the original descriptions collected from those participants. Instead, you will be shown a random selection of descriptions that originated from either real or imagined events.
In this experiment, you will be judging the reality of these prior descriptions. When a description appears on the computer screen, you will make a judgment on whether the event being described was initially a LIE or was the TRUTH. If you believe the event described was actually viewed in an earlier video, press the key labeled TRUTH with your RIGHT INDEX FINGER. On the other hand if you believe the event being described was never experienced and is a LIE, press the key labeled LIE with your LEFT INDEX FINGER.

Truth - Lie
Participants like you were brought in and were given one sentence descriptions of realistic events (e.g., "Watching teenagers play soccer in an alley"). They were then asked to remember a real event similar to that from their own memory and tell us as much detail as they could remember about that real event. Of course, not everyone had a memory each event we provided so some were omitted for select participants. Different participants were given the same set of one sentence descriptions but they were asked to lie to us about an event which fit that description. That is, they were asked to fabricate an event that NEVER took place and to tell us their detailed lie of the event. At times these when descriptions of the events contained obvious references to their origin, the references were replaced with XXXXX. For example, a phrase like "I am imagining going to..." might be changed to "I am XXXXX going to..." We point this out so that you will understand the meaning behind and purpose the censored language.
You will not be seeing ALL of the original descriptions collected from those participants. Instead, you will be shown a random selection of descriptions that originated from either true or fictitiousevents.
In this experiment, you will be judging the reality of these prior descriptions. When a description appears on the computer screen, you will make a judgment on whether the event being described was initially IMAGINED or SEEN. If you believe the event being described was initially IMAGINED, press the key labeled IMAGINED with your LEFT INDEX FINGER. On the other hand if you believe the event being described was initially SEEN, press the key labeled SEEN with your RIGHT INDEX FINGER.

Results

Accuracy of IRM Judgments as a Function of Instructions and Origin
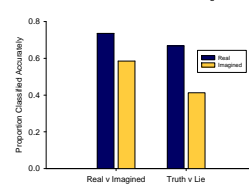
The correct judgments of source memory were analyzed using a 2 x 2 Mixed Model ANOVA. The analysis revealed that participants were better at accurately classifying memories for real events ($M = .66$) as opposed to imagined ($M = .54$), $F(1,72)=16.36$, $p<.001$, $\eta_p^2 = .19$. In addition, when participants were asked to discriminate the Real-Imagined condition, the proportion of accurate judgments was higher ($M=.70$) than when the condition was True-Lie ($M=.50$), $F(1,72)=45.32$, $p<.001$, $\eta_p^2 = .39$. Finally, there is a marginally significant interaction between the source of the memory and the condition it was presented, indicating that the instructions had a slightly larger effect on the imagined memories than the real memories, $F(1,72)=3.01$, $p=.08$, $\eta_p^2 = .39$.

Both confidence and reaction time to make judgments also tell us about the processes involved in making these discriminations (see figures below). The results of a 2 x 2 ANOVA on Confidence reveal that when participants were wrong in their judgments there was no difference in confidence between conditions. However, when the participants were correct they were more confident in their answers concerning Real-Imagined ($M=5.38$) over True-Lie ($M=5.00$), $F(1,71)=8.50$, $p=.005$, $\eta_p^2 = .11$. Furthermore, the results of a 2 x 2 ANOVA on Reaction Times reveal that participants were faster at making incorrect judgments ($M=5313.40$) than correct judgments ($M=7628.65$), $F(1,71)=27.842$, $p<.001$, $\eta_p^2 = .28$. There is also a significant interaction between correctness of judgment and condition, $F(1,71)=29.06$, $p<.001$, $\eta_p^2 = .29$. This interaction reflects the large difference in reaction times between correct and incorrect judgments in the Real-Imagined condition ($M_{cor}=8740.25$, $M_{inc}=4059.82$), whereas there is almost no difference in reaction time in the True-Lie condition ($M_{cor}=6517.05$, $M_{inc}=6566.99$).

Confidence in IRM Judgments as a Function of Instructions and Accuracy
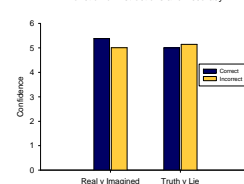
Latency to IRM Judgments as a Function of Instructions and Accuracy
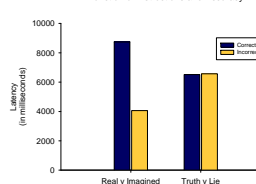
Discussion

In both conditions, participants were slightly better at detecting perceived events over imagined. However, on the whole they were able to accurately discriminate between real and imagined memories above chance. This indicates that people have the ability to accurately predict source memory based on content alone as opposed to using body language or other behavioral indicators. Other studies have demonstrated qualitative differences between perceived and imagined memories. The current results suggest that participants are picking up on those qualitative differences and incorporating them into their judgments.

In contrast, participants were unable to discriminate above chance between the apparent truthful and fallacious memories. It appears that they employ a separate set of discrimination criteria when evaluating a memory for reality status vs. deception. That is, it may be that the particular contents that would normally suggest a memory is real in the Real-Imagined condition might suggest it to be deceptive in the True-Lie. This would make sense if we believed that deceptive people were also aware of what constituted a difference between real and imagined memories and employed processes to make their deceptive (imagined) memory more real. In addition, the slight interactive effect between condition and source supports the notion that the difference in performance is due to the change in instruction specifically for the Imagined/Lie category.

When looking at the differences in confidence, not only were participants less accurate at distinguishing between true and lie, they were also less confident in their correct answers. This further supports the fact that people are poor at identifying deception. Moreover, it suggests that participants' correct responses were due to lucky guesses rather than using accurate discrimination criteria. Finally, examining the differences in reaction time, participants were faster to make inaccurate judgments. This difference reflects either that participants took greater caution when making correct judgments or it could be that the more detailed memories contained information that made it easier to determine its source. Finally, the fact that there is almost no difference in reaction time between correct and incorrect judgments in the True/Lie condition suggest that participants were on the whole unsure of what information constituted evidence for their judgment. Again, this supports the idea that deception hinders the ability to accurately evaluate source.

References

Johnson, M.K., Bush, J.G, & Mitchell, K.J. (1998). Interpersonal Reality Monitoring: Judgin g the Sources of Other People's Memories. *Social Cognition, 16*, 199-224.
Johnson, M.K. & Raye, C.L. (1981). *Psychological Review, 88*, 67-85.
Sporer, S.L. (1997). The Less Traveled Road to Truth: Verbal Cues in Deception Detection in Accounts of Fabricated and Self-Experienced Events. *Applied Cognitive Psychology, 11*, 373-397.

Acknowledgments & Reprint Requests