Memory for media: Investigation of false memories for negatively and positively charged public events

Stephen Porter, Kristian Taylor, and Leanne ten Brinke

Dalhousie University, Halifax, NS, Canada

Despite a large body of false memory research, little has addressed the potential influence of an event’s emotional content on susceptibility to false recollections. The Paradoxical Negative Emotion (PNE) hypothesis predicts that negative emotion generally facilitates memory but also heightens susceptibility to false memories. Participants were asked whether they could recall 20 “widely publicised” public events (half fictitious) ranging in emotional valence, with or without visual cues. Participants recalled a greater number of true negative events ($M = 3.31/5$) than true positive ($M = 2.61/5$) events. Nearly everyone (95%) came to recall at least one false event ($M = 2.15$ false events recalled). Further, more than twice as many participants recalled any false negative (90%) compared to false positive (41.7%) events. Negative events, in general, were associated with more detailed memories and false negative event memories were more detailed than false positive event memories. Higher dissociation scores were associated with false recollections of negative events, specifically.

Although memory distortion has been studied for nearly 80 years (Bartlett, 1932), the catalyst for the high level of scientific interest in the phenomenon at present was the development of Loftus’s ground-breaking misinformation paradigm in the 1970s. The original misinformation experiments demonstrated that memory is a highly constructive process, greatly influenced by exposure to information following the to-be-recalled event (see e.g., Loftus, 2005). Ensuing studies established that it is not only minor details that can be altered in memory; false memories are possible for major aspects of a scene, and even entire events and personal experiences (e.g., Hyman, Husband, & Billings, 1995; Lindsay, Hagen, Read, Wade, & Garry, 2004; Loftus & Pickrell, 1995; Porter, Yuille, & Lehman, 1999).

Using a novel approach to investigate false memories, Crombag, Wageman, and van Koppen (1996) found that a substantial proportion of people misremembered viewing non-existent video footage of high-profile public tragedies. They asked participants whether they recalled witnessing media video of a plane crash in Amsterdam. Although such footage did not exist, 66% of participants reported that they had seen the film, and elaborated the details of their false recollections. Similar findings have been obtained for false memories concerning diverse public tragedies. Ost, Vrij, Costall, and Bull (2002) found that 45% of their participants recalled seeing (non-existent) video of the Paris car crash in which Princess Diana was killed. Granhag, Stromwall, and Billings (2003) found that many Swedish participants (38% and 55% across two samples) reported recollections of non-existent video footage of the sinking of the Estonia ferry that claimed nearly 900 lives. Further, 73% of participants claimed that they had seen footage of the first plane crashing into the World Trade
Center in New York in 2001 when, in fact, no such footage was aired (Pezdek, 2003). Jelicic et al. (2006) found that 63% of participants reported remembering video footage of the assassination of the controversial Dutch politician Pim Fortuyn, despite the reality that no such footage existed. Further, Ost, Hogbin, and Granhag (2006) found that 39% of participants recalled non-existent television footage of the 2002 explosion in a Bali nightclub.

Collectively, this research indicates that the powerful negative emotion associated with such public tragedies does not immunise memory from the impact of misinformation (Nourkova, Bernstein, & Loftus, 2004). Similarly, memory “implantation” studies indicate that negatively charged childhood events can be mistakenly recalled following exposure to highly suggestive questioning (e.g., Loftus & Pickrell, 1995). In fact, while partial or complete false memories have been generated for both positively and negatively valenced events, one of the highest rates (56%) was found for highly negative events such as being attacked by an animal or a serious medical procedure (Porter et al., 1999; relative to the mean percentage of approximately 30% across experiments; Wade, Garry, Read, & Lindsay, 2002).

Despite the apparent susceptibility to misinformation of memories for negative emotional events, growing evidence suggests that high levels of negative emotion generally facilitate the endurance of memory relative to neutral or positively charged events. Although the traditional clinical view is that stress actively impairs memories (e.g., van der Kolk & Fisler, 1995), the possibility that negative emotion can instead enhance memory has received empirical support from studies of real-life traumatic experiences. For example, Porter and Peace (2007) found that details of traumatic experiences were recalled more consistently (both factually and in terms of phenomenological features) over a 5-year period than were positive experiences recalled by the same participants (see also Alexander et al., 2005). Lab-based research also indicates that highly negative photographic images are better recalled than positively charged images of similar intensity (Charles, Mather, & Carstensen, 2003; cf. Talarico, Labar, & Rubin, 2004).

In observing the pattern of results concerning memory and emotion collectively, we hypothesise that memories for negative emotional events are simultaneously powerful and fragile (Schacter, 1995). Specifically, we theorise that negative emotion enhances memory in general but also increases susceptibility to misinformation. This Paradoxical Negative Emotion (PNE) hypothesis, introduced here, posits that negative information will be well remembered over time, but will also be associated with a greater susceptibility to the distorting influence of misinformation relative to other emotional events. Although these findings may seem contradictory, an explanation may be derived from an evolutionary perspective. In general, negative or “dangerous” events, in particular, should be recalled better over time than neutral or other emotional events, in order to avoid or deal with them in the future (Porter & Peace, 2007). However, it may also be adaptive to incorporate relevant information concerning the negative event from others deemed trustworthy (in the modern context, this might include parents, therapists, or researchers, for example) in order to prepare for a similar, threatening event in the future. Direct evidence for this relatively high susceptibility of negative emotional events to misinformation was first obtained by Porter, Spencer, and Birt (2003). Using emotionally provocative visual images as stimuli, they found that negative images were associated with an increased susceptibility to major misinformation by 40% over positive and neutral conditions. Porter, Bellhouse, McDougall, ten Brinke, and Wilson (2007) used a similar approach but added a 1-week or month latency before re-testing the memories. At both the initial and follow-up tests, memories for negative images were associated with a substantially greater vulnerability to major misinformation than positive images.

In the present study we examined the relation between emotion and false memories, and tested the PNE hypothesis, by using real-life events and the approach introduced by Crombag et al. (1996). We compared, concurrently, how well participants recalled real negatively and positively charged public events, and the relative ease of generating false memories for comparable fictitious public events. The general methodological approach involved asking participants whether they recalled each of a series of past highly publicised media events ranging in emotional valence (positive versus negative) and veracity (true versus false). We predicted that participants would recall significantly more negatively charged than positively charged true public events and that negative memories would be more detailed. Further, it was predicted that
when presented with false events (characterised as true) participants would be more likely to mistakenly recall negative than positive events. The amount of time available to participants in making their decisions of event veracity and the presence of a visual memory cue were manipulated. Regarding the latter, previous research has indicated that the provision of photographic cues may increase susceptibility to memory distortion. Using doctored photographs that placed participants in a hot-air balloon as a child, Wade et al. (2002) found that 50% of their sample came to recall full or partial memories for the false event. Similarly, using genuine class photos as a memory cue, Lindsay et al. (2004) were successful in implanting full or partial childhood memories in 78% of participants, suggesting that the provision of a genuine image may be a strong predictor of false memory production. In addition to the influence of such a visual cue, we predicted that limiting the amount of processing time (1 minute versus 5 seconds in a brief exposure group) would increase the likelihood of false recollections occurring. Previous research has indicated that experimentally induced stress, represented here by restraints on response time, increases false recognition (Payne, Nadel, Allen, Thomas, & Jacobs, 2002). However, a longer exposure time might be important to develop detailed false memories. Finally, we included measures of individual differences previously found to be associated with susceptibility to false memories, in order to examine whether they were related to false memories for negatively and positively charged events. Specifically, dissociative tendencies (e.g., Hyman & Billings, 1998; Merckelbach, Muris, Rassin, & Hor schleben, 2000; Porter et al., 1999; Wright & Livingston-Raper, 2002; cf. Clancy, McNally, Schaeter, Lenzenweger, & Pitman, 2002; Ost et al., 2002) and personality factors (Porter, Birt, & Yuille, 2000) were examined.

**METHOD**

**Participants**

Canadian undergraduate participants (N = 60) took part in the main study in exchange for course credit. The sample included 17 males and 43 females with a mean age of 19.92 years (SD = 2.23). Participants were randomly assigned into one of the four experimental groups (n = 15 per condition): visual cue/5 seconds, visual cue/1 minute, no visual cue/5 seconds, no visual cue/1 minute exposure.

An additional 22 participants were recruited to rate the characteristics of each event. This sample was predominantly female (17 females, 5 males) with a mean age of 21.95 years (SD = 2.32).

**Materials**

*Public events.* A list of 20 true and fictitious public events from the decade preceding the study was generated. Of the 10 events that had actually occurred, all had been videotaped and have been widely disseminated throughout the Canadian news media, both shortly after their occurrence and replayed on numerous occasions afterwards. For each of the true and false events, five were positive and five were negative in emotional valence (see Appendix for full list of events). Four random orders of the 20 events were generated. Half of the participants were also presented with a photo image via a timed presentation to cue their memory for the prompted event. The selected images depicted a central person or location described in the prompt, but not the actual event itself. For example, for the prompt describing Bin Laden’s destruction of a Bible, a photograph of him sitting on the ground was presented.

*Dissociative Experiences Scale (DES).* In order to examine the extent to which participants have tendencies towards dissociation (e.g., lack of integration of feelings and thoughts into memory) and how this influences memory processes, the DES (Carlson & Putnam, 1993) was administered. This 28-item questionnaire describes a range of common dissociative experiences (e.g., being unaware of other events when absorbed in watching a movie) to severe indications of dissociation (e.g., not recognising family members and friends). Participants rate how often the experiences described happen to them (in terms of a percentage from 0% to 100%; increments of 10%). A single score is calculated, with higher scores being related to higher degrees of dissociative tendencies. The DES has good reliability, internal consistency, and construct validity (Carlson & Putnam, 1993).

*NEO-FFI.* This questionnaire (Costa & McCrae, 1992) is based on the “Five-Factor” theory of personality, and measures traits according to five general personality domains: neuroti-
cism, extraversion, openness to experience, agree-
ableness, and conscientiousness. Designed as a
brief, comprehensive measure of personality, the
NEO-FFI is a widely used scale with high
reliability, validity, and internal consistency
(Costa & McCrae, 1992).

**Procedure**

In the main study participants were randomly
assigned to between-participants conditions:
photo cue presentation (present vs absent) and
response time (5 seconds vs 1 minute). Partici-
pants were then informed that they would be read
sequentially a series of prompts about 20 public
events from the past decade that had been
videotaped, were “widely presented throughout
the media”, and that nearly everyone in Canada
would have seen on television. Events varied in
veracity and valence, which served as within-
participants variables such that all participants
were presented with the same true positive, true
negative, false positive, and false negative events.
Participants were instructed not to simply guess
but to indicate whether or not they recalled the
publicised event by indicating “yes” or “no”
within the assigned time limits (5 seconds or
1 minute). Participants in the visual cue groups
were also informed that a photograph associated
with the prompted event would be presented
on the computer screen to assist with their
recollections.

The experimenter proceeded through the list,
reading each prompt one at a time. With the
presentation of the verbal prompt (and visual
cue for half of the participants), participants
were given either 5 seconds or 1 minute to
decide whether they recalled an event, immedi-
ately after which the participant indicated their
decision. Each participant also rated his/her
confidence in the accuracy of each memory (or
lack thereof) on a 7-point scale (1 = not at all
confident to 7 = extremely confident). After responding
to all 20 prompts, participants were asked to
complete the demographic questionnaire, DES,
and NEO-FFI. Next, the experimenter returned
to the list of 20 prompts and read through the
list once more, in the same order as the original
presentation. For the events a participant had
previously recalled, the experimenter re-read the
prompt and then asked him/her to write down
any specific details that they could remember
about the event. They were then asked to
record, in writing, responses to the following
four autobiographical questions: (1) Where were
you when you heard about this event? (2) How
were you informed of this event? (3) What was
the date and time when you heard about this
event? (4) Were you with anyone else when you
heard about this event? (These four autobiogra-
phical questions were derived from the proce-
dure used by Pezdek, 2003, to investigate the
differences between event and autobiographical
memories for the events of September 11, 2001.)
After providing these details for the recalled
events, participants were again asked to rate
their confidence in their memory of this event
on a 1–7 scale. For events not recalled initially,
the experimenter asked, “You said that you did
not remember [insert event], do you have any
memories of this event now?” If the participant
still did not recall the event he/she was asked to
rate their confidence in this response. However,
if the participant now recalled this event, he/she
was asked to write down any specific details
about the event, answer the four autobiogra-
phical questions, and provide a confidence rating.
Participants then were debriefed.

A separate sample of participants, recruited to
rate event characteristics, were provided with
rating sheets that included a description of each
of the 20 events (as seen in the Appendix),
followed by Likert-type scales on which they
rated event arousal, plausibility, and personal
and global importance from 1 (not at all) to 7
(extremely). Upon completion of ratings, partici-
pants were debriefed.

**Coding procedure**

For the events recalled by the participant, the
number of autobiographical and event details
were coded. Event details were coded according
to the Memory Assessment Procedure (see Porter
et al., 1999 for further information). Autobiogra-
phical details were coded by assigning each
recalled event a score from 0 (participant was
unable to answer any of the autobiographical
questions) to 4 (participant answered all auto-
biographical questions).
RESULTS

Factors influencing recollections of the public events

When first asked, participants recalled a mean of 8.00 (SD = 2.57) or 40.0% of the 20 public events presented, with 57 (95.0%) of participants recalling at least one false event (M = 2.12; SD = 1.39). A closer analysis of false memory recall revealed that 54 participants (90%) recalled at least one false negative event, while only 25 recalled at least one positive false event (41.7%).

To further identify the factors influencing participants’ false recollections of the public events, a mixed ANOVA was conducted, with event veracity, emotional valence, and assessment time (initial vs follow-up questioning) as within-participants variables, and visual cue presence and response time as between-participants variables, with the number of events recalled as the dependent variable.¹ There were significant main effects of veracity, F(1, 56) = 228.85, p < .001, and valence, F(1, 56) = 32.37, p < .001. Specifically, participants were more likely to recall true than false events, and negative than positive events. Participants recalled a mean of 5.92 (SD = 1.77) true events compared to a mean of 2.15 (SD = 1.74) of the 10 false events presented. They recalled a mean of 4.78 (SD = 1.80) negative events compared to a mean of 3.28 (SD = 1.49) of the 10 positive events presented. Post hoc tests indicated that participants were more likely to recall true negative events (M = 3.31, SD = 1.27) than true positive events (M = 2.61, SD = 0.96), t(59) = 3.91, p < .001. Similarly, more false negative events (M = 1.48, SD = 0.95) were recalled than false positive events (M = 0.68, SD = 0.91), t(59) = 4.93, p < .001. There were no main effects of assessment time, visual cue presence or response time, and no interaction of veracity and valence (ps > .05).

¹ A series of Pearson correlation matrices examined the extent to which mean characteristic ratings related to the recall of each emotional, public event. Frequency of recall of true negative, false positive, and false negative events was not significantly correlated with ratings of arousal, plausibility, or global or personal importance (ps > .05). Only plausibility was significantly related to the recollection of true positive events (r = .92, p < .05). No other characteristic ratings were significantly related to the recollection of true positive events, ps > .05.

Details accompanying recalled events

In order to identify the factors influencing the amount of information contained in the memories for the public events, a mixed ANOVA was conducted with event veracity and emotional valence as within-participants variables, visual cue presence and response time as between-participants variables, and the number of details freely recalled as the dependent variable.² The analysis revealed a main effect of veracity, F(1, 49) = 6.68, p < .05, valence, F(1, 49) = 4.91, p < .05, and time condition, F(1, 49) = 5.95, p < .05, but no significant effect of visual cue presence (p > .05). Specifically, true events were associated with more recalled details (M = 5.57, SD = 2.70) than false events (M = 4.97, SD = 2.77) and recollections of negative events (M = 5.54, SD = 2.79) included more details than those of positive events (M = 5.01, SD = 2.66). When given 1 minute (M = 6.11, SD = 2.44) to recall an event, participants recalled more details than when decisions had been made within 5 seconds (M = 4.44, SD = 2.50). Additionally, a veracity × valence interaction emerged such that false negative events (M = 5.46, SD = 3.27) were associated with more details than false positive events (M = 4.42, SD = 2.69). On the other hand, true positive (M = 5.55, SD = 2.98) and true negative events (M = 5.57, SD = 2.92) were recalled with similar amounts of detail (see Figure 1). Last, there was a significant veracity by response time interaction, F(1, 19) = 5.04, p < .05; false events recalled after the 5-second exposure were associated with fewer details (M = 3.89, SD = 2.68) than after a 1-minute exposure (M = 6.06, SD = 2.45). Thus, the false events became elaborated in memory with an increase in processing time. In contrast, processing time made little difference to the

² Given that only 21 participants reported details of at least one each of true positive, true negative, false positive, and false negative events, we used expected cell mean replacement to allow for a more comprehensive analysis. Expected cell values were calculated by adding the participant’s mean across veracity × valence conditions to the condition mean across all participants, minus the grand mean. After expected cell mean replacement for individuals missing only one cell of data (e.g., didn’t recall any false positive events and therefore didn’t provide any details of these events), N increased to 53 for this analysis. It should be noted that a parallel repeated-measures ANOVA, without cell replacement (N = 21), also revealed a main effect of veracity, F(1, 17) = 4.96, p < .05, such that memories for true events (M = 4.63; SD = 2.25) were associated with a greater number of details than false events (M = 3.50; SD = 2.49).
amount of detail reported for the true events ($M = 4.98$, $SD = 2.70$) versus $M = 6.16$, $SD = 2.61$, for the 5-second and 1-minute exposure time, respectively).

An ANOVA with expected cell mean replacement, examining the number of specific autobiographical details (0–4) relating to the circumstances in which they first learned of the public event, yielded no significant main effects or interactions ($ps < .05$).

**Confidence in the recollections**

To identify the factors influencing participants’ confidence in their recollections of the true and false events, a mixed ANOVA was conducted, with event veracity (emotional valence) and assessment time (initial vs follow-up questioning) as within-participants variables, and visual cue presence and response time as between-participants variables, with confidence ratings serving as the dependent variable. The ANOVA yielded a significant main effect of veracity, $F(1, 31) = 8.77$, $p < .01$, indicating that participants were more confident in their recollections of true ($M = 5.45$, $SD = 0.17$) than false events ($M = 5.01$, $SD = 0.24$), although the mean difference was small. There also was a significant effect of assessment time, $F(1, 31) = 14.39$, $p < .001$, suggesting that confidence in the memories increased from the initial assessments ($M = 5.04$, $SD = 0.19$) to follow-up ($M = 5.42$, $SD = 0.21$).

**Individual differences in susceptibility to memory distortion**

We next investigated the possible association of dissociation with susceptibility to false memories. When participants were initially asked if they recalled each event, no significant relationships emerged. However, when recollection for each event was questioned the second time, there was a significant positive relationship between DES score and the number of false events recalled ($r = .28$, $p < .05$). Further, DES scores were significantly related to the recall of false negative events specifically ($r = .27$, $p < .05$), but not to the recall of false positive events at time two ($p > .05$).

Next the potential relationships between personality factors (as indicated by the five traits measured by the NEO-FFI) and false memories were considered. When considering the frequency with which participants endorsed events at initial questioning, extraversion ($r = .32$, $p < .05$) and agreeableness ($r = -.26$, $p < .05$) were significantly related to recollection of false events. Of the five traits only extraversion was related to false memories at follow-up assessment; there were significant relationships between extraversion scores and the total number of both false events recalled ($r = .28$, $p < .05$) and the number of false positive events recalled ($r = .26$, $p < .05$).

**DISCUSSION**

With its enormous basic and applied implications (e.g., Loftus, 2005), the false memory phenomenon has been the focus of much scientific attention in recent years. Key unresolved issues concerning false memories include the factors that render one type of event more or less likely to be falsely recalled than another event, and individual differences in susceptibility. In particular, little is known about the affective factors influencing susceptibility to false memories. We were interested in the validity of our Paradoxical Negative Emotion (PNE) hypothesis, predicting that, relative to other emotional events, negative events will be simultaneously “powerful” or well remembered over time, but also “fragile” in that the human mind will be particularly susceptible to misremembering such events in the presence of misinformation from an authoritative source. We predicted that participants would exhibit superior
recall for true public events with negative themes than those with positive themes. Further, we predicted that participants would be more likely to falsely recall negative than positive events. To our knowledge, this was the first investigation of false memories for positive and negative public events.

The main predictions of the PNE hypothesis were strongly supported. First, participants were more likely to recall true negative \((M = 3.31\) or 66.2\% of the events presented) than true positive events \((M = 2.61\) or 52.2\% of the events presented), suggesting that negative emotional events are more enduring in memory than positive events (at least in terms of whether the event occurred). Further, participants endorsed more false negative \((M = 1.48\) or 29.6\% of events presented) than false positive events \((M = 0.68\) or 13.6\% of events presented), in line with the hypothesis that negative memories are also “fragile” and susceptible to distortion. A second important finding was the ubiquity of false memories within the sample. When presented with false events suggested to be historically accurate, 95\% (57/60) of participants reporting recalling at least one false event, with an average of more than two false memories per participant. These results build on previous findings suggesting that emotion does not immunise the mind from being vulnerable to memory distortion, and that false emotional events are readily implanted in memory (e.g., Porter et al., 1999). Further, false negative events were more than twice as likely as false positive events to be falsely recalled, with 90\% of participants recalling at least one false negative event and only 41.7\% endorsing at least one false positive event.

Additional support for the PNE hypothesis comes from the quantity of detail associated with memories for each event type. As expected, memories for negative events in general were more detailed than those of positive events, reflecting their enduring nature. However, a valence by veracity interaction also suggested that false negative memories were more detailed than false positive memories, reflecting an exacerbated susceptibility to distortion of memory for negative events. Also, given more time to consider whether an event exists in your memory appears to increase the number of details recalled—particularly for false events. Thus, the false events became elaborated in memory with an increase in processing time whereas the true events remained relatively consistent. It is possible that the provision of more processing time could lead to even more detailed false reports and higher ratings of confidence (as witnessed here from the first to the second ratings).

Although none of the independent variables we examined influenced the responses concerning the specific autobiographical details within the recollections, it may have been due to a lack of variance in the responses. Specifically, it was observed that when individuals did recall an event—true or false—they almost always indicated that they knew the answers to three of the four autobiographical questions: where they were, who they were with, and how they first heard about the public event. Additionally, this pattern held true regardless of whether a visual memory cue was presented. The photographs used as memory cues had little impact on the likelihood of false memories occurring. The type of photographs used by Lindsay et al. (2004) may have been much richer memory cues than those employed in the current experiment because the participants themselves were present in the image (old class photographs), thus resulting in an increase in false memories. Here, participants had no personal ties to the photographs being used as prompts for public events presented.

An issue arising in the recovered/false memory debate was whether individual differences contribute to susceptibility to false memories. Our results corroborate previous findings of a positive association between dissociative tendencies as reflected by DES scores and susceptibility to false memories (e.g., Hyman & Billings, 1998; Merckelbach et al., 2000; Porter et al., 2000; Wright & Livingston-Raper, 2002). Overall, as predicted, higher DES scores predicted frequency of false memories, particularly when recollection of each event was questioned the second time. However, when the events were dichotomised according to emotional valence, the association was specific to negative false events only. This brings into question the explanation that attention and memory processing in high DES scorers is impaired in general (e.g., Spiegel, 1997). For example, Hyman and Billings (1998) theorised that individuals with dissociative tendencies may have learned to integrate information from external sources into their personal narratives to make the narratives more complete and coherent. Such individuals may be more likely to believe the plausibility of, and personally accept, suggested events from external sources. However, it appears that this vulnerability is heightened over
time with suggestions of negative material specifically. This highlights the importance of the dissociation construct in the formation of false memories in therapy or forensic contexts in which negative events are the focus of discussion. In terms of the relation between personality features and memory distortion, we found that extroversion scores were associated with false recollections for positive events. This was unexpected based on the findings of Porter et al. (2000) who found a negative association between extroversion scores and false memories for negative events. Further, a negative association between agreeableness and initial endorsement of false events was unexpected. Given that we found a positive relationship between extroversion and recalling false positive events, future research could investigate whether extroverts have a positive bias in their memories and introverts a negative bias that could lead to a heightened susceptibility to false memories for events similar in valence to the bias.

The current study provides important insights into potential affective influences on susceptibility to false memories. Given that individuals can easily incorporate negative historical events into their memories, it is essential that improper questioning techniques be avoided in practice to reduce the consequences of false memories, particularly false memories for negative events, in applied settings. Overall, this study demonstrates the ease of implanting memories for events that have never occurred and reveals the important role that affective and individual difference factors play in the process.

Manuscript received 13 August 2007
Manuscript accepted 22 April 2008
First published online 28 May 2008

REFERENCES


Porter, S., Birt, A. R., & Yuille, J. C. (2000). Negotiating false memories: Interviewer and rememberer char-
characteristics relate to memory distortion. Psychological Science, 11, 507–510.

APPENDIX

True positive
1. Tom Cruise threw his hands up in the air and jumped around on Oprah’s couch during a 2005 episode.
2. In August 2006, a comatose man’s brain spontaneously rewired after being in a coma for twenty years.
3. In 2005, during his ongoing trial at a California courthouse, Michael Jackson climbed up on top of his SUV while blowing kisses and waving to his excited fans.
4. In September 2006, the Pope was spotted sporting a red wide-rimmed hat that made quite a fashion statement.
5. Sprinter Donovan Bailey was handed a Canadian Flag in 1996 after beating the world record for the 100 m dash.

True negative
6. In 2006, after being arrested because of driving under the influence of alcohol, Mel Gibson erupted into a series of anti-Semitic slurs.
7. Vancouver Canucks hockey player Todd Bertuzzi made a public apology 2 days after he sucker punched Steve Moore and subsequently ended Moore’s hockey career.
8. During a 2005 Canada/USA exhibition hockey game, singer Carol Marcell forgot the lyrics to the Star Spangled Banner twice and then slipped and fell on the ice while returning with her sheet music.
9. At the 2004 Olympics, Canadian athlete Perdita Felicien ruined her hopes of a medal by tripping over a hurdle.
10. In 2002, an American fighter plane dropped a laser-guided bomb, killing 4 Canadian Soldiers and injuring 8 others.

False positive
11. A 2002 episode of This Hour Has 22 Minutes that showed Rick Mercer bungee jumping naked.
12. The video of Stephen Harper singing a blues song on stage with Bill Clinton.
13. During one of her music video productions there was footage of Britney Spears riding on a pink elephant.
14. An episode of the Nature of Things that showed David Suzuki kissing a gorilla on the lips.
15. After winning the Stanley Cup in 1995, TSN showed Wayne Gretzky falling with the trophy and then laughing about it.

False negative
16. A day after the 2005 London bombing, a bloody bicycle was shown hanging from a tree within a mile of where the bombings had occurred.
17. Live video footage of the events on September 11th, 2001 showed a helicopter in the air near where the second tower was hit.
18. Amongst the many photos capturing the destructions of Hurricane Juan, there was a picture of a sharp tree that had impaled a stray dog at Point Pleasant Park.
19. A video of Paul Bernardo and Karla Holmolk was discovered and released that showed them describing their plan to kidnap young women.
20. A week after the events of September 11th, 2001, CNN showed video footage of Bin Laden tearing up a Bible.