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False Memories for Fake News during Ireland's Abortion Referendum

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Abstract

The current study examined false memories in the week preceding the 2018 Irish abortion referendum. Participants (*N* = 3140) viewed six news stories concerning campaign events, two fabricated and four authentic. Almost half of the sample reported a false memory for at least one fabricated event, with more than a third of participants reporting a specific memory of the event. Yes voters (those in favor of legalizing abortion) were more likely to 'remember' a fabricated No campaign scandal than No voters and vice-versa. This difference was particularly strong for lower cognitive ability voters. A subsequent warning about possible misinformation slightly reduced rates of false memories, but did not eliminate these effects. This study suggests that voters in a real-world political campaign are most susceptible to forming false memories for fake news that aligns with their beliefs, in particular if they have lower cognitive ability.

Keywords: false memory, politics, fake news, misinformation, bias

False Memories for Fake News during Ireland's Abortion Referendum

Political campaigns often produce memorable moments. A candidate misspeaks or a scandal is exposed, and the campaign momentum swings rapidly. People tend to vote based on their recollection of candidates and campaign events (Lau & Redlawsk, 2006), but are these memories always accurate? Can voters be influenced to form false memories for fabricated events during a political campaign?

False Memories

Many studies have demonstrated the ease with which individuals can form rich false memories (Loftus, 2005). The source-monitoring framework (Johnson, Hashtroudi & Lindsay, 1993) posits that memories are not stored with tags that identify their source. Instead, the source is inferred through a rapid evaluation of the memory details, including heuristic judgments (e.g. temporal, spatial and affective qualities) and systematic judgments (e.g. comparing the memory to pre-existing beliefs and knowledge). For example, when asked about a political scandal, a voter makes a series of judgments, both heuristic ('is this recollection vivid and detailed?') and systematic ('is this in line with other information I have about this politician?'). False memories can arise when these mechanisms lead individuals to unwittingly manufacture thoughts and images and mistake them for prior experience (Strange, Garry, Bernstein & Lindsay, 2011; Saachi, Agnoli & Loftus, 2007).

Research suggests that individuals may be particularly susceptible to forming false memories about events that are congruent with their beliefs. Frenda, Knowles, Saletan & Loftus (2013) presented participants with true and fabricated political events and found that liberals were more likely to 'remember' President Bush vacationing with a famous baseball player in the aftermath of hurricane Katrina, while conservatives were more likely to 'remember' President Obama shaking hands with Iranian President

Ahmadinejad. Cognitive ability may also predict susceptibility to false memories. Lower cognitive ability has been associated with an increased tendency to incorporate post-event information into eyewitness memories in both younger (Zhu et al., 2010) and older adults (Roediger & Geraci, 2007). Individuals with lower cognitive ability are also less likely to update their attitudes when presented with evidence that the basis for their attitudes is inaccurate (De keersmaecker & Roets, 2017). These findings suggest that individuals with low cognitive ability will be more susceptible to forming false memories concerning fabricated political events, and this may be especially true for ideologically-congruent stories. As this interaction has not yet been assessed, it is unclear if the tendency to falsely remember ideologically-congruent events is a result of some insurmountable partisan bias that distorts the systematic source-monitoring judgment, or if it can be overcome by those with higher cognitive ability, who likely engage in more effective source-monitoring.

While previous studies have recorded false memories for political events, none have done so during a real-world political campaign. Research has demonstrated that explicit warnings about the possibility of misinformation can sometimes modestly reduce false memories and beliefs (e.g. Blank & Launay, 2014; Pennycook, Cannon & Rand, 2018; Qin, Ogle & Goodman, 2008). In everyday life, however, people are unlikely to encounter news stories with explicit warning labels. What are sometimes seen are general warnings about unreliable news sources, with consumers urged to think critically. For example, during Ireland's 2018 abortion referendum, all Irish Facebook users were presented with tips for detecting fake news and media reports urged voters to be vigilant against misleading information (Graham-Harrison, 2018; Ní Aodha, 2018). As no previous studies have examined false memories during an active campaign, it is unclear if voters in such an environment will be susceptible to forming false political

memories. To explore this issue, the current study also examined the consequences of explicitly warning participants that they may have been exposed to fake news. This examination of false memories in a high-stakes, highly-emotional, campaign has important applied implications (e.g. devising strategies to prevent voter false memories), but is also of theoretical importance. It has been argued that false memories form because individuals use lax criteria in source decisions (Qin, Ogle & Goodman, 2008), and that warnings may encourage stricter source-monitoring (Echterhoff, Hirst & Hussy, 2005). If the in-group political orientation effect observed in Frenda et al. (2013) is due solely to lax monitoring, it may be moderated under conditions where voters receive warnings that make them suspicious. Likewise, it is unclear from previous research if the effect of cognitive ability on false memories is due to a reduced tendency to source-monitor effectively, or an inability to do so even when explicitly warned.

Ireland's Abortion Referendum

On 25th May 2018, a referendum was held in Ireland to repeal the eighth amendment to the Constitution. The eighth amendment guaranteed "the unborn" an equal right to life to that of a pregnant woman and, as a consequence, Ireland had some of the most restrictive abortion laws in the world (Taylor, 2015). Abortion has long been a deeply divisive issue in Ireland, prompting complex public discourse (McCarthy, O'Donnell, Campbell & Dooley, 2018). The referendum thus provided an ideal opportunity to study political false memories, as it involved an emotional debate between two camps with deeply-held convictions. Furthermore, a 1995 Supreme Court decision requires Irish state broadcasters to provide balanced coverage of both sides of a referendum (Reidy & Suiter, 2015). In contrast with studies conducted in the partisan

environment of US politics, in which consumers may choose news sources that align with their ideology, this ensured that voters were relatively well-informed about both campaigns and reduced concerns about differences in media consumption. Voter turnout for the referendum was high (64.5%), further confirming that this was an important issue for the electorate. The landslide victory for Yes (with 66.4% of voters in favor of repealing the abortion ban) came as a surprise to most commentators, as the vote was expected to be close (Bohan, 2018).

The Current Investigation

During the week preceding the referendum, participants completed an online survey featuring true and fabricated campaign events. We tested three hypotheses. First, we expected voters to report more false memories for stories consistent with their beliefs (i.e., Yes voters would remember more scandals about the No campaign and vice-versa). Second, we expected lower cognitive ability to be associated with increased false memories, particularly for stories in line with participants' beliefs. Third, we expected political orientation and cognitive ability to predict participants' ability to identify the fake news stories after they were warned about the possible presence of misleading information.

Method

Participants

Participants (N = 3140) were recruited via social media, university mailing lists, and an article on TheJournal.ie, an Irish online news outlet (available in Supplementary Materials). The mean age was 32.02 (SD = 13.11). Participants reported their biological sex as female (2122), male (991), and other (3); 24 declined to answer. The majority of the sample (2342) indicated that they would be voting Yes (to repeal the ban on

abortion), 379 indicated they would be voting No (to retain the ban on abortion), 147 were unsure how they would vote, 128 reported that they would not or could not vote, and 144 declined to state their voting preference. Though No voters were specifically targeted in recruitment efforts, the online data collection was perhaps more suited to Yes voters - exit polls showed that the only age cohort with a majority of No voters were over 65's, with 87% of 18-24 year olds voting Yes (Leahy, 2018). We calculated that a sample of 260 (130 per group) was needed to detect the smallest effect size reported in similar studies (Frenda et al., 2013).

Materials

The news events presented in this study consisted of an unaltered photograph accompanied by a short summary (for similar methods, see Strange et al., 2011; O'Connell & Greene, 2017). After reading the story, participants were asked if they remembered the event, to which they could respond 'I remember seeing/hearing this', 'I don't remember seeing/hearing this but I remember it happening', 'I don't remember this but I believe it happened', 'I remember this differently' or 'I don't remember this'. Unlike previous studies in this area, participants were given the option of reporting a mere belief that an event had happened, allowing the data to speak to the recent debate concerning the prevalence of false memories versus false beliefs (Brewin & Andrews, 2017; Wade, Garry & Pezdek, 2018). Participants were also asked if they remembered where they had heard about the event and they could select from a range of options (e.g., TV, social media, a friend, other source) or could indicate that they didn't remember where they had heard it. Finally, participants were asked 'how did you feel at the time?' and provided with a text box to write an open-ended response.

Each participant saw four true news stories, selected from a potential pool of eight (see Supplementary Materials. To ensure that the study did not influence voting behavior so close to a referendum, none of the stories concerned information about the referendum itself or the proposed legislative changes. Instead, both the true and false stories focused on events from the campaigns (e.g. the actions of politicians or campaign leaders), with a balance of positive and negative events concerning each side.

There were a total of four fabricated news events (see Figure 1). The first story concerned either the Yes side or the No side having to destroy campaign posters purchased illegally using foreign funds. This story was plausible as speculation about foreign interference in the referendum had dominated headlines in the preceding weeks (Ní Aodha, 2018). Facebook announced a ban on all ads from foreign sources just two weeks before the referendum, with Google going further and banning all referendum-related ads, citing fears over election integrity. Crucially, neither group's posters were found to be funded with foreign money and none were destroyed at any point. The second fabricated story linked the referendum campaign to a high-profile sexual assault trial that took place in Northern Ireland in 2018. The Yes and No versions of this story were designed to specifically tap into existing stereotypes of each group of voters; that the Yes side were dramatic feminists who were exaggerating the negative impact of the eighth amendment, and that the No side were misogynists who did not trust women to make their own decisions.

To assess cognitive ability, all participants were invited to complete the Wordsum at the end of the study. Wordsum is a 10-item subtest of the Wechsler Adult Intelligence Scale vocabulary test. Participants are presented with a target word and asked to select the closest match from a list of 5 other words (Thorndike & Gallup, 1944). Wordsum has been used extensively in the General Social Survey in the US,

where the average score is 6/10 (Meisenberg, 2015) and is highly correlated with more extensive IQ tests (Miner, 1957).

Procedure

The study procedures were approved by the School of Applied Psychology Ethics Committee, University College Cork. The survey was described to participants as 'investigating attitudes towards the referendum and the two campaigns'. After providing demographic information, half of participants completed questions concerning the referendum including how they planned to vote, how important the referendum was to them, and how much they approved of each campaign. The remaining participants completed these questions at the end of the study. Participants were then presented with six news stories (four true and two fabricated) in random order. The fabricated stories consisted of the illegal poster story (concerning either the Yes or No campaign), and the sexual assault trial comments story (concerning the other campaign).

After viewing all six stories, participants were told: "Some participants who undertook this survey were shown fake news stories (stories concerning events that did not happen, entirely fabricated by the researchers). If you think you may have been shown any fake stories, please select any story you believe to be fake." Finally, participants were debriefed and invited to complete the Wordsum.

The Together for Yes campaign was forced to destroy 25,000 campaign posters after evidence emerged that the posters were bought using funding received from American pro-choice lobbyists.

The Save the 8th campaign was forced to destroy 25,000 campaign posters after evidence emerged that the posters were bought using funding received from American pro-life lobbyists.

Speaking after former Ulster rugby players were found not guilty of sexual assault, a pro-choice campaigner made headlines when they said ‘we identify with victims of rape, as all women in this country have been raped by the 8th amendment and the patriarchy that supports it’.

Speaking after former Ulster rugby players were found not guilty of sexual assault, a pro-life campaigner made headlines when they said ‘this verdict is another blow to the pro-abortion mantra of “trust women” – clearly not all women can be trusted’.

Figure 1. The four fabricated news events used in the study. Each participant saw one story about the Yes campaign and one story about the No campaign (one from the top row concerning illegal posters and one from the bottom row concerning a high-profile sexual assault trial).

Results

We first dichotomized participants' responses into remembering the event (those who selected the options 'specific memory' or 'remember it happening') versus not remembering the event (those who selected the options 'remember it differently' or 'don't remember this'). Unless otherwise stated, participants who selected 'I believe this happened' were removed from analyses comparing those who 'remembered' an event with those who did not.

On average, participants had a hit rate of 56% for the four true stories and a false alarm rate of 32% for the two fabricated stories. Almost half (48%) of participants reported remembering at least one of the two fabricated events they were shown (37% reported a *specific* memory of hearing or seeing one of the events, 11% reported a more general memory that the event had happened). When the "believe" option was included, 63% reported either a memory or a belief in at least one of the fabricated events. Those who indicated that they remembered an event were more likely to select a specific source where they first heard about it (e.g. television, radio, social media) for true stories (M = 93.85% on average across all true stories, 95% CI = [92.23, 95.47]), than for false stories (M = 84.73% on average across all false stories, 95% CI = [81.82, 87.64]), $t(487) = 5.73$, $p < .001$, $d = 0.34$.

H1: Political orientation

The percentage of true stories remembered by Yes voters (57%) and No voters (58%) did not differ significantly, $t(2719) = 0.53$, $p = .60$, see Supplementary Materials for responses to each true story. As shown in Figure 2, Yes voters were more likely to remember or believe the fabricated No poster story (54% remembered or believed) than No voters (38% remembered or believed), $X^2(1, N = 1312) = 16.11$, $p < .001$, $V =$

.11. Similarly, No voters were more likely to remember or believe the fabricated Yes poster story (40% remembered or believed) than Yes voters (30% remembered or believed), $X^2(1, N = 1409) = 8.48$, $p = .004$, $V = .08$. Importantly, these group differences were evident no matter how memories were classified; when comparing only those who reported a specific memory of the event (No Poster $X^2(1, N = 1312) = 6.41$, $p = .011$, $V = .07$; Yes Poster $X^2(1, N = 1409) = 15.01$, $p < .001$, $V = .10$) or when comparing those who reported a specific or general memory of the event, but excluding those who merely believed it had occurred (No Poster $X^2(1, N = 1126) = 13.10$, $p < .001$, $V = .11$; Yes Poster $X^2(1, N = 1274) = 12.44$, $p < .001$, $V = .10$). It is worth noting that the No poster story may have been more believable than the Yes story overall; amongst participants who indicated that they would not be voting, the No story (35% remembered) was recalled at over twice the rate of the Yes story (16% remembered), $X^2(1, N = 113) = 5.35$, $p = .02$, $V = .22$

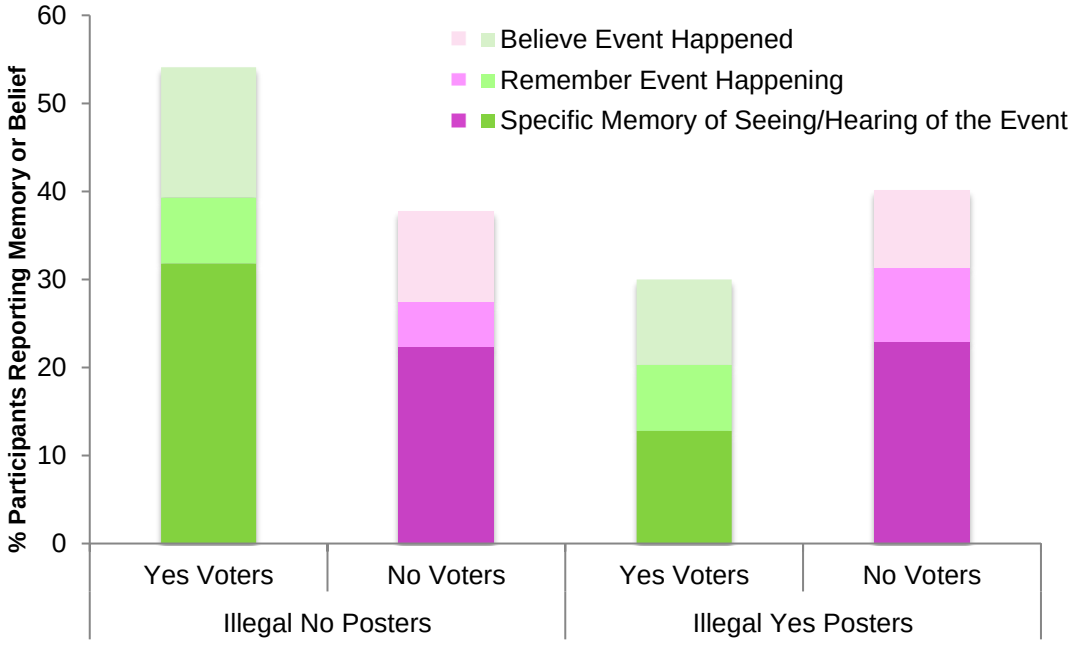

Figure 2. Responses by Yes and No voters to the fabricated story concerning the destruction of Yes/No posters purchased illegally with US funding (note no error bars are included here as this is count data reported as proportions).

Qualitative responses to both versions of the story suggested that some participants formed rich and detailed false memories. Responses to the No poster story included, '*I had my mind made up prior to these posters, however, after this story I was disinterested in the No campaign as I didn't agree with the involvement of other countries in our countries decisions*' (Female, 24, voting Yes), and '*I don't think anything wrong happened and the posters shouldn't have been burned*' (Male, 19, voting No). Responses to the Yes poster story included, '*Thought it was hilarious!*' (Male, 71, voting No) and '*I didn't see why it mattered*' (Female, 19, voting Yes).

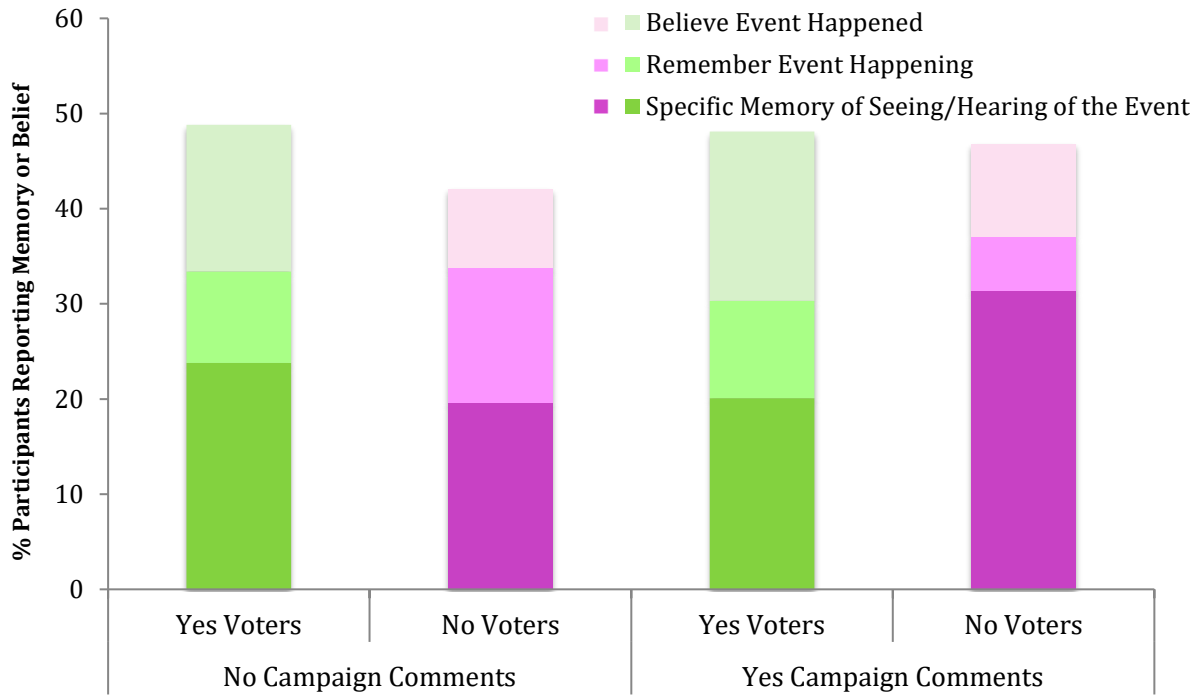

Figure 3. Responses by Yes and No voters to the fabricated story concerning inflammatory comments made by the Yes/No campaign, linking the referendum to a high-profile sexual assault trial (note no error bars are included here as this is count data reported as proportions).

Fabricated stories about inflammatory comments linking the referendum to a high-profile sexual assault did not result in a similar effect. As Figure 3 shows, there was no difference between voting groups in rates of false memories for either version of the inflammatory comments story. For the No campaign story, Yes voters were as likely to remember or believe the inflammatory comments (49% remembered or believed) as No voters (42% remembered or believed), X^2 (1, N = 1409) = 3.08, p = .08. Similarly, for the Yes campaign story, No voters were as likely to remember or believe the inflammatory comments (47% remembered or believed) as Yes voters (48% remembered or believed), X^2(1, N = 1312) = 0.10, p = .76.

Examination of qualitative responses to the inflammatory comments stories suggest a possible explanation for this null finding and led us to focus on the poster stories in subsequent analyses. Specifically, some participants' responses focused on the sexual assault trial itself rather than on the fabricated inflammatory comments of campaigners after the verdict (e.g. '*Angry that the men were innocent and were accused and their careers and lives have been extremely negatively influenced due to it*', and '*Don't think they were as innocent as they made out to be'*). Because some participants focused on the trial (which did occur), whereas others focused on the inflammatory comments (which were fabricated), it was unclear which feature of the comments stories participants' memory ratings referred to. Therefore, the remaining analyses refer only to the poster stories. All our data (including further responses related to the comments stories) has been made available online (https://osf.io/7CZYN).

H2: Cognitive ability

A total of 2181 participants (69% of the sample: 73% of Yes voters, 71% of No voters) completed the cognitive ability test (see Supplementary Materials for a comparison of participants who completed the Wordsum and those who did not). The mean score was 7.61/10 (95% CI = [7.54, 7.68]; median = 8). There was no difference in cognitive ability between Yes (M = 7.61, 95% CI = [7.54. 7.69]) and No voters (M = 7.60, 95% CI = [7.40. 7.81]), $t(1977) = 0.09$, $p = .93$. A hierarchical binary logistic regression was conducted to assess how false memories for the illegal poster story were predicted by ideological congruency (i.e., whether participants viewed the story that concerned the campaign they supported [0] or the opposing campaign [1]) and cognitive ability. This analysis included the 1756 participants who "remembered" or did not remember the fabricated poster story; those who selected 'I believe this happened' were excluded.

Ideological congruency and cognitive ability were entered in the first block, followed by the interaction term in the second block. The first model was significant, $\chi 2(2, N = 1756) = 98.81$, $p < .001$, R^2 (Cox & Snell) = .06, R^2 (Nagelkerke) = .08, and correctly classified 69.8% of cases. As shown in Table 1, there was a main effect of ideological congruency, where participants were more likely to report remembering the false story if it was in line with their beliefs. There was also a main effect of cognitive ability, where participants were 11% less likely to report a false memory for every one-point increase in their Wordsum score. The addition of the interaction term in the second block improved the model fit (p = .001; model; $\chi 2(3, N = 1756) = 110.33$, $p < .001$, R^2 (Cox & Snell) = .06, R^2 (Nagelkerke) = .09, and correctly classified 70.4% of cases. When all other variables were controlled for, participants were 14 times more likely to report remembering the false story if it was in line with their beliefs (though note the wide confidence interval on this estimate). The main effect of cognitive ability was rendered non-significant, but there was a significant interaction effect, whereby those with higher cognitive ability showed a reduced ideological congruency effect.

Table 1: Results of a logistic regression analysis predicting false memories for the illegal poster story (*n* = 1756).

	Predictors	*b*	*SE b*	Wald	*df*	*p*	*Exp(b)*	95% C.I.
Model One	Ideological Congruency	0.99	0.11	83.72	1	**<.001**	**2.69**	[2.17, 3.32]
	Cognitive Ability	-0.12	0.03	13.97	1	**<.001**	**0.89**	[0.83, 0.95]
	Constant	-0.44	0.25	3.01	1	.083	0.65	-
Model Two	Ideological Congruency	2.66	0.51	27.19	1	**<.001**	**14.31**	[5.26, 38.90]
	Cognitive Ability	0.01	0.05	0.03	1	.870	1.01	[0.92, 1.11]
	Ideological Congruency x Cognitive Ability	-0.22	0.67	11.40	1	**.001**	**0.80**	[0.70, 0.91]
	Constant	-1.40	0.39	13.02	1	<.001	0.25	-

For illustrative purposes, Figure 4 depicts the percentage of participants who "remembered" the fabricated poster stories using a cognitive ability median split. Participants were categorized as higher cognitive ability (8 or higher, *n* = 1150) or lower cognitive ability (7 or lower, *n* = 1031).

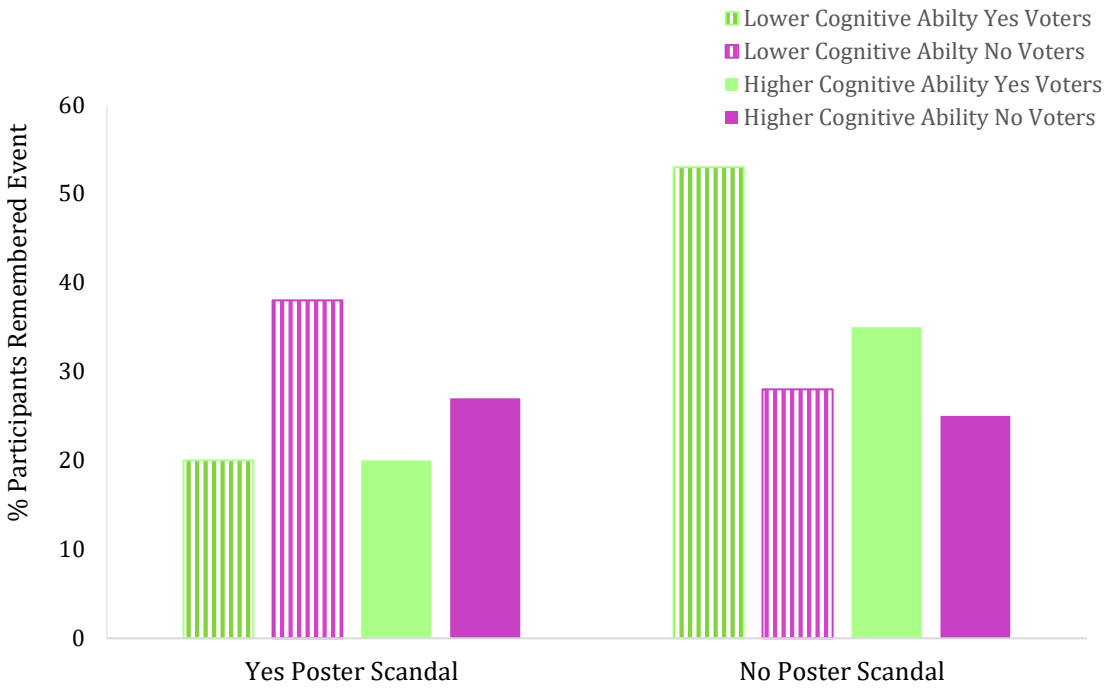

Figure 4. Percentage of Yes & No voters who "remembered" the fabricated story concerning illegally-funded posters by cognitive ability (note no error bars are included here as this is count data reported as proportions).

H3: Identifying Fabricated Stories After an Explicit Warning

After being warned that some of the stories they viewed might have been fabricated, and asked to identify which ones, participants selected an average of 1.70 of the six stories they viewed as fake, 95% CI = [1.68, 1.76], with 81% of participants choosing between 1 and 3 stories and 15% failing to select any stories. There was no difference in the total number of stories selected as fake by Yes (M = 1.72, 95% CI = [1.68, 1.77]) and No voters, (M = 1.74, 95% CI = [1.62, 1.85]), t (2719) = 0.24, p = .81. The fabricated stories were identified as fake (47%) at over twice the rate of the true stories (19%), with the poster stories selected as fake by 52% of participants and the comments stories selected by 43% of participants. Selection of the true stories as fake ranged from 9% to 31%.

Due to the difficulties in assessing responses to the comments stories, only the poster story responses were analyzed further. As expected, those who initially reported

remembering the poster story (excluding believers) were significantly less likely to later select it as fake, $X^2(1, N = 2774) = 271.92$, $p < .001$, $V = .31$. Overall, 31% of participants who falsely remembered the poster story in the first part of the study then went on to select that story as fabricated. This relatively low rate suggests robust false memories for 69% of participants, who failed to retract their memory even when alerted to the possible presence of misleading information.

To assess factors predicting success in selecting the fabricated poster story as fake, a hierarchical binary logistic regression model was built using the same variables as the earlier regression model (cognitive ability, ideological congruency and their interaction). Participants were excluded if they did not complete the cognitive ability assessment or did not indicate they would be voting Yes or No. Ideological congruency and cognitive ability were entered in the first block, followed by the interaction term in the second block. The first model was significant, $\chi2(2, N = 1756) = 96.26$, $p < .001$, R^2 (Cox & Snell) = .05, R^2 (Nagelkerke) = .06, and correctly classified 63% of cases. As shown in Table 2, there was a main effect of ideological congruency, such that participants were less likely to identify the story as fake when it was in line with their beliefs. There was also a main effect of cognitive ability, where for every one-point increase in their Wordsum score, participants were 13% more likely to identify the story as fake. The addition of the interaction term in the second block improved the model fit (p = .003; model; $\chi2$ (3, $N = 1979$) = 105.33, $p < .001$, R^2 (Cox & Snell) = .05, R^2 (Nagelkerke) = .07, and correctly classified 63% of cases. There was a main effect of ideological congruency whereby participants were 88% less likely to identify the story as fake when it aligned with their beliefs. As with the false memory findings, the main effect of cognitive ability was rendered non-significant in the second block, but there was an interaction between cognitive ability and ideological congruency, such that those

who scored higher in cognitive ability were more likely to identify stories in line with their beliefs as fake.

Table 2: Results from the logistic regression analysis: cognitive ability, ideological congruency, and their interaction as predictors of correctly identifying the illegal poster story as fabricated (*n* = 1979).

	Predictors	*b*	*SE b*	Wald	*df*	*p*	*Exp(b)*	95% C.I.
Model One	Ideological Congruency	-0.82	0.09	77.04	1	**<.001**	**0.44**	[0.37, 0.53]
	Cognitive Ability	0.13	0.03	19.31	1	**<.001**	**1.13**	[1.07, 1.20]
	Constant	-0.17	0.22	0.61	1	.436	0.84	-
Model Two	Ideological Congruency	-2.13	0.45	22.76	1	**<.001**	**0.12**	[0.05, 0.29]
	Cognitive Ability	0.04	0.04	0.69	1	.408	1.04	[0.95, 1.12]
	Ideological Congruency x Cognitive Ability	0.17	0.06	9.01	1	**.003**	**1.19**	[1.06, 1.33]
	Constant	0.51	0.32	2.51	1	.113	1.66	-

Discussion

The current study is one of the largest false memory experiments to date, with a sample equating to one in every thousand registered voters in the Republic of Ireland. The findings demonstrate the ease with which memories for fabricated scandals can be

created during emotional, highly-consequential political campaigns, with almost half of participants reporting a false memory. The qualitative responses suggest that some participants created rich false memories, reporting novel details (e.g. that the illegal posters were 'burned'). Participants were relatively poor at identifying the fake stories even after they had been alerted to the study's purpose, further underscoring the strength of these easily-created false memories.

As hypothesized, political orientation impacted false memories, with Yes voters more likely to remember the No poster scandal than No voters, and vice-versa. The current study is the first to demonstrate this during a real campaign. A novel contribution of this study is the use of identical stories for both sides, reducing concerns about matching story complexity. However, the data suggests that Yes voters were especially likely to remember the fabricated No poster story. We don't believe that this is indicative of any difference in gullibility between voting groups, especially in light of the fact that no difference in cognitive ability was observed between Yes and No voters, but rather that the poster story was more easily attributable to the No campaign. This is likely due to the fact that foreign-funding accusations were more common for the No campaign (Graham-Harrison, 2018).

Importantly, the difference between Yes and No voters was evident for the poster story no matter how memories were classified: assessing precise memories only or including more general memories and/or beliefs. It has been suggested that studies may overestimate false memories by participants who simply find an event believable (Wade et al., 2018). Here, we clearly distinguished between these two possibilities, and even omitting those who merely believed the event occurred, 34% of participants reported false memories for the illegal posters. The sample in the current study were self-selected and likely highly interested in the referendum. As interest in a topic has

been shown to increase false memories (O'Connell & Greene, 2017), the observed rate of false memory is likely to be characteristic of groups who are invested in political campaigns.

In the final regression model, there was no main effect of cognitive ability, suggesting that lower cognitive ability did not globally increase false memories. Instead, lower cognitive ability was associated with an increased effect of ideological congruency on false memories. This finding contributes to research that has identified the propensity to engage in analytic thinking as a predictor of resistance to fake news (Pennycook & Rand, in press), but further suggests that higher cognitive ability may allow individuals to overcome the biasing effect of political orientation and more effectively source-monitor their memories. This is important in understanding the role of bias in source-monitoring judgments and suggests that individual differences in fake news susceptibility are complex and multi-layered.

Perhaps due to the many warnings of fake news circulating in Irish media at the time of the survey, participants often seemed suspicious of our motives (e.g. '*Did this happen?.....Is this survey a No campaign scam?*' and '*I think this survey is incredibly biased towards Yes*'). That the political orientation and cognitive ability effects persisted despite this suspicion and indeed, despite an explicit warning about possible fake news in the second part of the study, suggests that these effects cannot simply be eliminated by encouraging stricter source-monitoring (Echterhoff, Hirst & Hussy, 2005). This suggests that political orientation, especially when combined with lower cognitive ability, may bias the heuristic and systematic source-monitoring judgments to such an extent that warnings do not eradicate the effects. This has applied implications for combatting fake news and merits further study.

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