When Do People Correct Misinformation?

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The study of misinformation—and how to correct false beliefs—has proliferated in recent years. Despite intense scholarly attention to this topic, it remains unclear when people will correct false beliefs. The empirical literature includes instances where corrective messages do and do not work, even on the same (or similar) issues. Our study theorizes about two factors that condition the success of a corrective message: the extent to which an issue is "politicized" (central to partisan cleavages) and the personal importance a person attaches to the issue. Unlike past research, the topic of our study—genetically modified foods— allows us to cleanly estimate the potential effect of each factor. In a large national survey experiment we find that a corrective message was successful among Democrats and Republicans who had been primed to think of GM foods in partisan terms, but that this same message was unable to alter the beliefs or attitudes of people who rated the issue as personally important. While it is easy to label misinformation as a pathology of partisan bias, our study shows that misinformation also stems from the human tendency to engage in attitude protection on topics one holds dear.

Misinformation threatens democracies around the world, and this challenge to self-rule has spurred a vast social science literature on how to correct false beliefs. A central tenet of this research is that the desire to be consistent with a previous attitude or worldview contributes to misinformation and makes it difficult to correct false beliefs. Yet the empirical record paints a confusing picture. Past studies have shown that corrections both are and are not effective on the same issue (e.g., compare Nyhan and Reifler 2010 with Wood and Porter 2019 on the Iraq war, or Zhou 2016 with Johnson 2017 on climate change). Ecker and Ang (2019) explain this pattern by noting that misperceptions can be more or less central to a person's worldview. To the extent that a false belief has implications for a strongly held attitude or identification, a person will resist changing it. In other situations, people correct false beliefs knowing that doing so has few consequences for their attitudes or partisan attachments.

We build upon this insight from Ecker and Ang (2019) in a study that involves the topic of genetically modified (GM) foods. In particular, we examine two factors that we expect to condition the success of a corrective message: the degree to which the issue is politicized (i.e., contested along partisan lines) and the importance a person attaches to the issue. In an experiment using a large national sample, we find that Democrats and Republicans correct mistaken beliefs about GM foods, even in situations where the partisan implications of the issue are highlighted. Their attitudes also become more favorable toward GM foods after being exposed to a corrective message about the issue. In contrast, people who view GM foods as a personally important issue are more intransigent in their beliefs and attitudes than those who do not rate the issue as important. Taken together, this study's findings illuminate the conditions under which people revise false beliefs and they suggest a vital role for the subjective sense of issue importance. The findings have implications for public opinion on a plethora of other issues

such as nuclear power, fracking, vaccines, and fluoridation (also see Bolsen and Druckman 2015). Indeed, personal involvement on any of these topics could generate the sort of attitude resistance one expects on salient partisan issues. Misinformation stems not only from partisan bias, but also from the tendency to engage in attitude protection on topics one holds dear.

The Existing Literature on Misinformation, and Its Correction

Misinformation occurs when a person has inaccurate beliefs but voices confidence in them. Indeed, "it is the 'I know I'm right' syndrome" (Kuklinski et al. 2000, 799) that distinguishes misinformation from being uninformed and makes it a more formidable problem. It is surprising, then, that subsequent research on correction has revealed a patchwork of patterns (Jerit and Zhao 2020). There is evidence of successful correction (e.g., Haglin 2017; Weeks 2015) as well as failed correction and "backfire" effects (e.g., Nyhan and Reifler 2010). Describing this literature, communications scholar Brian Weeks wrote: "It is clear that corrections work in some circumstances but not others. What is not apparent is *why* or *how* corrections succeed or fail when one is attempting to challenge partisan-based claims" (2018, 148, emphasis added).

Observing these discrepancies, Ecker and Ang (2019) argue that the "centrality of the misinformation to [a person's] attitude might be an important factor" (2019, 244). Centrality, in this context, refers to the extent to which a false belief has implications for a person's political identity. Ecker and Ang test this idea in an experiment that varies whether a false claim is about the corrupt behavior of a specific party member versus the corrupt behavior of all members of the political party. Consistent with the author's expectations, participants were more likely to correct their beliefs (in response to a retraction) in the situation involving the individual party member because the misinformation could be dismissed as a unique event. In the condition that

implicated all party members, the false claim represented a greater threat (i.e., was more central) to subjects' political identity.

The Ecker and Ang (2019) study is valuable for theorizing about when a correction will (or will not) be successful. Our study extends their efforts in several ways. First, instead of focusing on misinformation regarding hypothetical politicians, we examine a real-world issue (GM foods) where there are widespread misperceptions. Political issues vary in the clarity of their underlying ideological divisions (Chong and Mullinix 2019, 1211), an attribute that we will leverage in an experiment that makes GM foods more or less central to a person's political partisanship. A growing body of work illustrates the powerful role played by directional partisan motives in the context of misinformation (e.g., Prasad et al. 2009) and information processing more generally (e.g., Cohen 2002).

Second, in addition to the well-known role played by partisan identity, we consider another factor that might motivate a person to cling to false beliefs. We focus on issue importance (Krosnick 1990), or the subjective sense of concern and significance that a person attaches to an issue (also see Boninger, Krosnick and Berent 1995 or Cuik and Yost 2016). Important issues are, by their very nature, central to a person's self-concept through their relation to "tangible goals, core values, or socially important individuals and groups" (Lavine, Borgida, and Sullivan 2000, 83). Mullinix (2016) documents the powerful role played by issue motivations, writing that, "People who view an issue as personally important are motivated to engage in elaborative information processing, but seek out and filter information in a manner that protects prior issue attitudes" (2016, 387). Thus, issue importance is *not* synonymous with having accuracy motives, and can instead result in the biased processing of new information (Mullinix 2016; also see Lavine, Borgida, and Sullivan 2000 or Krosnick 1990). Just as

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misinformation central to a person's political allegiances can be impervious to corrective messages, misperceptions regarding an "important" issue may be similarly resistant.[1]

The existing literature thus suggests two hypotheses regarding the conditions under which we might observe resistance to corrective messages. The first (Partisan Resistance Hypothesis) states that a corrective message will be less effective in changing false beliefs when misinformation is politicized (i.e., the false belief has implications for one's partisan identification) than when it is not politicized. The second hypothesis (Issue Importance Hypothesis) states that a corrective message will be less effective in changing false beliefs among people who view the issue as personally important relative to those who do not view the issue as important.

Study Design & Measures

We tested our hypotheses in an experiment embedded in a national survey administered by Dynata (formerly Survey Sampling International). The study (N= 2,347) was administered on U.S. adults from March 9–23, 2020. We begin by discussing our decision to focus on GM foods, and then describe the experimental design.[2]

Issue Selection. We chose GM foods as the topic of our study for several reasons. First and foremost, there is a deficit of knowledge on this issue. The balance of scientific evidence confirms that GM foods are safe and have the same nutritional content as conventionally grown

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[1] It is crucial to distinguish issue importance from political identity because issue motivations may not "pull in the same direction" as partisan allegiances (Mullinix 2016, 387).

[2] See appendix for stimuli wording. This study was approved under IRB2019-00615 at [Redacted].

foods, but survey data shows that people have concerns about GM food products.[3] Additionally, we selected GM foods because the issue is not polarized by party (Lewandowsky, Gignac, and Oberauer 2013), making it possible to manipulate this factor in a way that would be more difficult with a partisan issue. In the data we report below, partisan identification is unrelated to respondent's overall opinions about GM foods as well as the importance they attribute to the issue. What motivates information processing on GM foods if there is only a modest role for partisanship? The answer relates to the unique pathologies of public opinion on GM foods— namely, misperceptions about their safety. In national data from the 2019 ANES Pilot Study, among those who self-report feeling "extremely confident" about their knowledge of GM foods, nearly *half* are inaccurate in their beliefs about safety. A similar pattern appears in the Dynata data: people who rate GM foods as "very" or "extremely" important are significantly less accurate in their factual beliefs ($p < .001$) than other respondents (i.e., they are more likely to think GM foods are unsafe and less nutritious). These patterns signify a potential role for issue motivations (Mullinix 2016).

　　Experimental Design. Our experimental design is a 2 (correction; no correction) X 3 (non-politicized; politicized-liberal; politicized-conservative) between-subjects experiment. The first manipulation relates to the *timing* of a corrective message about the safety and nutritional

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[3] A 2015 Pew survey reveals a substantial expert-mass gap on this issue. Whereas 88% of members of the American Association for the Advancement of Science (AAAS) say GM foods are safe, the comparable figure for the mass public is 37%. More recently, half of respondents (49.6%) wrongly claim that "genetically modified foods are not safe to eat" in the American National Elections 2019 Pilot Study.

content of GM foods. All participants are initially exposed to a three-paragraph news story that repeats common but inaccurate concerns regarding safety and nutritional content. Later in the study, subjects view a strong corrective message that invokes the U.S. Department of Agriculture as well as the National Academies of Science, Engineering, and Medicine (NAES).[4] Importantly, a random half of subjects receive that correction *before* they answer outcomes regarding factual beliefs and attitudes, while the other half see the correction *afterwards*. Thus, we give accurate information to all study participants, but vary the timing so as to estimate the causal effect of the information on respondents' attitudes and beliefs. For simplicity, we refer to the first set of respondents as the "correction" group and the second set as the "no correction" group (even though the latter did ultimately receive one).[5]

The second manipulation concerns the degree to which the issue is politicized (i.e., contested in the political realm; see Lupia 2013). In the non-politicized conditions, the final paragraph of the news story conveys a generic argument against GM foods (e.g., invoking ethical concerns). In the politicized conditions, the final paragraph presents political arguments against GM foods: specifically, references to environmental damage on the liberal side, or claims about regulations for agricultural businesses on the conservative side. Following the approach in Chong and Mullinix, we sought to "[bring] out the ideological direction of a policy by

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[4] One part of the message states that, "there are no known nutritional differences between GM foods and their non-GM counterparts," and that, "genetically modified foods have been consumed for more than two decades without a single food safety incident."

[5] Given the ethical considerations of studying misinformation, our experiment included a strong debriefing which described the purpose of the deception and repeated the corrective message.

identifying the values at stake and the segments of society that will be helped or hurt by it"

(2019, 1212). We also manipulated the image that appeared with the news story. In the

politicized conditions, labels for either "Democrats" or "Republicans" appeared on a protester

sign whereas no partisan cue appeared on the protester sign in the non-politicized condition. We

discuss our pretesting of this content in the empirical results section. Here we simply note that

our pilot tests confirm the stimuli in the politicized conditions had the intended effect on

respondents' perceptions of GM foods as a partisan issue. A schematic of the design appears in

Figure 1.

Figure 1. Design Schematic

	Non-politicized Rhetoric	Politicized (liberal rhetoric)	Politicized (conservative rhetoric)
"No correction" (outcomes appear *before* correction)	1	2	3
Correction (outcomes appear *after* correction)	4	5	6

After study participants read the story on GM foods, they answered two manipulation

checks (Kane and Barabas 2019) and three demographic questions which served as distractor

items. Subjects next answered our key outcomes either before (Conditions 1–3) or after

(Conditions 4–6) seeing the story with corrective information regarding GM foods. Dependent

measures consisted of two factual items about the safety and nutrition of GM foods.

Additionally, there were two attitude items: the first asked respondents to rate their level of

concern about GM foods on three dimensions (safety, environmental effects, and impact on

business), and the second asked how favorable or unfavorable a person felt toward GM foods.

Prior to the experimental manipulations, we measured the self-reported importance of

genetically modified foods. Issue importance was measured pre-treatment in a battery of five

items that asked, "How important are the following issues to you personally?" The other items

in the battery were immigration, poverty, abortion, and climate change.[6] A series of personality

questions as well as a placebo news story separated the issue importance battery from the

experimental treatment (i.e., the story on GM foods). It is unlikely that participants discerned the

purpose of the issue importance battery, and indeed no subjects expressed suspicion about the

connection between the importance questions and the GM news story in open-ended remarks.

Empirical Results

The Partisan Resistance Hypothesis states that a corrective message will be less effective in

changing false beliefs when misinformation is politicized along partisan lines than when it is not

politicized. It is essential, then, that the experimental treatments manipulate how participants

think about GM foods. We conducted extensive pretesting to ensure that our stimuli had the

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[6] As to the validity of self-reported issue importance, Krosnick states: "People know very well

when they are deeply concerned about an attitude, and they know just as well when they have no

special concern about one" (Boninger, Krosnick, and Berent 1995, 62). We rely on the standard

wording for measuring issue importance.

expected effects (namely, making GM foods more or less central to traditional partisan cleavages).[7]

Pretest Results

The news story on GM foods (134–136 words) consists of three paragraphs: an initial paragraph introducing the issue and describing recent action by state legislatures to promote GM foods, a second paragraph noting opposition coming from those with safety and nutrition concerns, and a third paragraph containing additional claims against GM foods. The arguments in the third paragraph were either politicized in the liberal or conservative direction, or non-politicized (see Figure 1).

Our pretesting showed several key patterns. First, the paragraph conveying the misinformation regarding safety and nutrition makes respondents less likely to think GM foods are safe relative to those reading a placebo story ($|t| = 2.16$; df 272; $p < .05$, two-tailed). Second, the manipulation in third paragraph is effective in changing perceptions of the issue. Respondents reading the politicized text (corresponding to Conditions 2, 3 5, or 6 in Figure 1) were significantly more likely ($p < .05$) to state that the topic of GM foods is "an issue where liberals and conservatives would disagree" than respondents who viewed the non-politicized text (corresponding to Conditions 1 and 4). Crucially, however, the liberal and conservative arguments against GM foods were statistically indistinguishable on other dimensions related to argument strength (e.g., believability, clarity, novelty, being informative). Finally, a separate pretest confirmed the effectiveness of the corrective message that participants would later view.

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[7] Pretesting took place on the Amazon MTurk platform in the winter of 2019–2020 and was approved under IRB2019-00615. The N from these studies ranges from 402 to 575.

In pretesting, people reading the corrective message were more likely to state that GM foods were safe relative to those in a placebo condition, who read about a non-political topic ($|t| = 2.88$; df 278; $p < .01$). Overall, the pilot studies confirm that our experimental stimuli prime common misperceptions about GM foods, politicize this issue (in selected conditions), and then correct existing beliefs with a strong information treatment (e.g., as in Bullock 2011). Our main experiment (discussed next) explores the conditions under which a correction—even one that has been shown to be effective—may fail to change people's beliefs and preferences.

Partisan Resistance Hypothesis

Factual Beliefs. We examine the effect of the corrective story on factual beliefs with two items about the safety of GM foods and nutritional content vis-à-vis non-GM foods. Respondents were asked to indicate whether statements about both topics were true or false and shown a sliding scale with four labeled response options ("Definitely True," "Probably True," "Probably False," and "Definitely False"). The statement for nutrition read, "Genetically modified foods have the same nutritional value as non-GM foods," which is true according to the best available scientific evidence. The statement for safety read, "Genetically modified foods pose a health hazard to consumers," which is false. The safety item was reversed-coded so that higher values on both belief items indicate a correct response (with values ranging from 0–100).[8]

The first row of entries in Table 1 shows mean values on the two factual belief items (*Nutrition* and *Safe*) among all respondents in the "No Correction" groups. The columns correspond to patterns in the non-politicized, politicized-liberal, and politicized-conservative

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[8] The wording of this question allows us to measure the direction of beliefs as well as the subjective sense of confidence about the response (e.g., Carnahan, Bergan, and Lee 2020).

conditions. Reading across the first row, there are no differences in the level of GM food

misinformation in the non-politicized and politicized conditions for either outcome. Thus, the

news story was equally effective in priming misperceptions about safety and nutrition,

irrespective of whether the story mentioned of partisan differences.[9] Table 1 also reveals that

misperceptions regarding safety are more severe than they are for nutrition (i.e., lower levels of

accuracy on *Safe* compared to *Nutrition*), which may reflect greater popular discussion of the

safety issue (e.g., Brody 2018). The second row of Table 1 presents mean values for respondents

who read the corrective message before answering the factual belief items (i.e., these respondents

were in the "Correction" group). There is a substantively large, and statistically significant

correction in both the non-politicized and politicized conditions (from 9 to 11 points and shown

in the third row labeled "Difference"). The strong effect for the corrective message is consistent

with our pretesting as well as previous work showing that experts are uniquely credible on the

issue of GM foods (e.g., Wunderlich and Gatto 2015).

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[9] This conclusion is reinforced by analysis of the manipulation checks. Two-thirds of the sample

provided a correct answer to at least one of the manipulation checks, implying a relatively high

level of attention to the stimuli.

Table 1. Factual Beliefs about GM Foods across Politicized and Non-Politicized Conditions

All Respondents	Nutrition			Safe		
	Non-Politicized	Politicized Liberal	Politicized Conservative	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	50.15	49.96	51.61	41.19	40.68	43.24
Correction	60.77	61.34	63.29	51.87	50.96	52.39
Difference	10.62	11.37	11.67	10.68	10.27	9.15
N	785	787	775	785	787	775

Democrats	Nutrition			Safe		
	Non-Politicized	Politicized Liberal	Politicized Conservative	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	50.87	50.16	51.22	40.46	39.03	42.94
Correction	63.64	61.81	61.13	52.64	49.90	50.85
Difference	12.77	11.66	9.91	12.18	10.87	7.92
N	305	332	352	305	332	352

Republicans	Nutrition			Safe		
	Non-Politicized	Politicized Liberal	Politicized Conservative	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	50.12	50.73	51.06	40.32	40.93	42.73
Correction	60.09	62.10	66.80	51.13	52.29	54.26
Difference	9.97	11.37	15.75	10.81	11.36	11.53
N	319	306	266	319	306	266

Note: Cell entries indicate mean values on Nutrition and Safe variables, which range from 0 to 100. Low values signify incorrect beliefs. All reported differences come from t-tests and are significant at $p < .01$.

The Partisan Resistance Hypothesis states that a corrective message will be less effective in changing false beliefs when misinformation is politicized (e.g., it emphasizes implications relevant to a person's preferred party) than when misinformation is not politicized. Empirically, we expect to observe modest (to no) differences between the Correction and No Correction groups for particular respondent-condition pairings. Democrats should be less willing to correct their views on GM foods after being exposed to politicized rhetoric that highlights liberal

concerns (e.g., GM foods harm the environment) relative to the ideologically neutral rhetoric in the non-politicized condition. A similar pattern is expected for Republicans, but here the relevant comparison is the degree of correction in the condition with politicized rhetoric featuring conservative concerns (e.g., GM regulations hurt farmers) versus the corresponding change for Republicans in the non-politicized condition. In both situations, the topic of GM foods has become more central to a person's political identity, increasing the psychological burden of accepting a correction that contradicts the party cue.[10]

The relevant results are presented in the middle ("Democrats") and bottom ("Republicans") sets of rows in Table 1. As the cell entries reveal, the corrective message was just as effective in changing partisans' beliefs about nutrition and safety in the politicized condition as it was in the non-politicized conditions. Despite being exposed to an ideological rationale for opposing GM foods, Democrats and Republicans were just as likely to heed the corrective message in the politicized conditions as in the non-politicized condition. For example, in the bottom right part of Table 1, Republicans in the Politicized-Conservative condition

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[10] Empirical tests of the Partisan Resistance Hypothesis are based on the idea that partisan relevance is most salient when considering one's own party rather than the opposing party (see Jerit and Barabas 2012 for an analogous discussion of "partisan relevance"). If partisan resistance to a corrective message is to be observed anywhere, that resistance should occur when a person is considering the values or groups cherished by their own party.

experience a 11.53 point corrective effect regarding GM food safety, which is similar to the belief change in the Non-politicized condition (10.81).[11]

GM Food Attitudes. Some past research has shown that people adjust factual beliefs to align with corrective messages, but maintain their prior attitudes (e.g., Thorson 2016). To examine whether a similar dynamic was occurring on GM foods, we included attitude items that solicited respondents' concerns with GM foods and their overall opinion on the issue. The Partisan Resistance Hypothesis implies that people in the politicized conditions will be less likely to modify their attitudes about GM foods, post-correction, relative to people in the non-politicized conditions.

Attitudes toward GM foods were measured with a grid item asking respondents how much they agree with three statements that corresponded (in varying degrees) to information from the initial new story. The first statement read, "I am concerned about the health effects of genetically modified foods." The second one read, "There are too many environmental risks associated with genetically modified foods." And the third one read, "Government regulation of

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[11] Table 1 reports results from t-tests. In additional analyses, we interact partisan dummy terms and condition indicators in separate models comparing treatment effects in Conditions 1 vs. 4, 2 vs. 5, 3 vs. 6. Partisanship does not moderate the effect of the treatment (i.e., there are non-significant interactions in all comparisons; see Appendix tables). Furthermore, in analyses not reported here we confirmed that all substantive conclusions remain the same in models with covariates, an important precaution when experimental analyses include an observed moderator (Kam and Trussler 2017).

genetically modified foods will harm American agriculture."[12] Subjects indicated their concern

on a seven-point scale that ranged from strongly disagree to strongly agree (with higher values

indicating greater concern). In addition, respondents were asked," Overall, how favorable or

unfavorable is your opinion toward genetically modified foods?" and gave a response on a

seven-point favorable-unfavorable scale. In the analysis below, higher values on this item reflect

more unfavorable attitudes.

Beginning again with all respondents, the corrective message was effective in changing

attitudes (i.e., making people more positive toward GM foods), with largely significant main

effects for people in the Correction groups on the concern items as well as the overall opinion

question. They key question is whether a similar pattern appears among partisans who were

exposed to ideological arguments against GM foods (i.e., in the politicized conditions).

When it comes to concerns about safety, there is a consistent main effect for the

corrective message ($p < .05$), in which people become less concerned about safety of GM foods.

Contrary to the Partisan Resistance Hypothesis, there is no interaction with partisanship; i.e.,

even in conditions where opposition to GM foods becomes linked to partisanship, Democrats and

Republicans change their views to the same degree as their counterparts in the other conditions.

Recall that the politicized conditions provide an *additional* opportunity to examine partisan

resistance because these conditions featured ideological critiques of GM foods (regarding

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[12] The topic of safety was mentioned in all versions of the news story. Recall, however, that

references to potential environmental harms only appeared in the politicized-liberal conditions

(Conditions 2 and 5), and references to increased regulation of agricultural businesses only

appeared in the politicized-conservative conditions (Conditions 4 and 6).

harmful effects on the environment and business, respectively) that were *not* subsequently

corrected. Yet even here, there was a main effect for the corrective message that was not

moderated by respondent partisanship. Democrats reported less concern regarding the

environment, post-correction, in the condition that had exposed them to liberal critiques against

GM foods. Similarly, Republicans voice less concern regarding harm to business, post-

correction, even in the condition that had exposed them to conservative critiques against GM

foods. Given the similar pattern across the three concern items, we created a scale (α = .79) and

examined the effect of the correction on the composite concern measure. As expected, there is

significant, negative main effect on concern, with no differential effect for partisans in the

politicized conditions.

Table 2 shows that there is a similar pattern on the favorability question (where higher

values indicate more unfavorable attitudes). Among participants in the correction conditions, the

follow-up story had the expected effect in reducing unfavorable ratings (making opinions about

GM foods *more* favorable), with *p* values from t-tests ranging from .02 in the Politicized

conditions to .09 in the Non-Politicized condition.

Table 2. Attitudes about GM Foods across Conditions

All Respondents	Overall Opinon (high = unfavorable)		
	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	4.19	4.23	4.10
Correction	3.97	3.79	3.80
Difference	0.22*	0.44**	0.30**
N	785	332	352

Democrats	Overall Opinon (high = unfavorable)		
	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	4.20	4.24	4.19
Correction	3.93	3.66	3.92
Difference	0.27	0.58**	0.26
N	305	332	352

Republicans	Overall Opinon (high = unfavorable)		
	Non-Politicized	Politicized Liberal	Politicized Conservative
No Correction	4.12	4.11	3.88
Correction	3.94	3.92	3.69
Difference	0.19	0.18	0.19
N	319	306	266

Note: Cell entries indicate means on 7-point favorability question (see text for wording). All reported differences come from t-tests.
** $p < .05$ * $p < .10$

Once again, however, partisanship does not weaken this effect. Democrats are no less likely to change their opinions in the politicized conditions (and if anything, favorability improves the most in the politicized-liberal condition, difference = .58; $p < .05$). Likewise, Republicans improved their favorability ratings to the same degree across the non-politicized and politicized conditions. Taken together, respondents were responsive to corrective information, and Democrats and Republicans changed their attitudes in the direction of that information even when there was a partisan motive for discounting the correction.

The findings for beliefs and attitudes were contrary to the Partisan Resistance Hypothesis, and they also are at odds with past studies reporting the biasing effects of party cues (e.g., Bisgaard 2015; 2019; Cohen 2003; Rahn 1993; but see Carnahan, Bergan, and Lee 2020 or Wood and Porter 2019). Our pretesting confirmed the power of our stimuli to politicize GM foods; so how does one account for the fact that partisans heeded the corrective message? One possibility is that issues become "central" to a person's political identity only after being in the public consciousness long enough to generate automatic associations with one party or other (Chong and Mullinix 2019, 1212). Such associations form as a result of repeated exposure to issue-relevant information from elites and the mass media (Ciuk and Yost 2016, 330) and subsequent attitude-relevant thought (Lavine, Borgida, and Sullivan, 2000, 83). In other words, the conditions under which partisan identities become central to information processing might be more limited than previously supposed. This conclusion is suggested by Leeper and Slothuus, who observe that "the selection of highly contentious issues…[e.g., in past studies]… might bias research toward finding evidence of strong directional motivations and their effects" (2014, 143; also see Druckman 2012).

A person's willingness to correct false beliefs depends on "how intensely they need to defend" (Leeper and Slothuus 2014, 143) their views. As such, another contributing factor may be the subjective sense of importance that people feel toward certain issues.

Issue Importance Hypothesis

Approximately 40% of the Dynata sample said that GM foods was "very" or "extremely important" to them personally. Yet people who give this response also tend to have inaccurate beliefs about GM foods. The Issue Importance Hypothesis implies that people who rate this issue as personally important will be less likely to heed the corrective message that GM foods are safe (e.g., given their tendency to have inaccurate priors). We should therefore observe modest (or null) differences for high importance respondents, relative to other respondents, across the Correction and No Correction conditions.[13] In the interest of simplicity (and because issue importance is largely orthogonal to partisan identification), we collapse the non-politicized and politicized conditions in the analyses below.[14]

Factual Beliefs. People who state that the GM foods issue is important to them personally are more likely to be inaccurate about nutrition and (especially) safety, and they are less likely to

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[13] In our analyses, importance is recoded to a dichotomous variable. The "high importance" category represents people saying GM foods is "Very" or "Extremely" important to them. People giving any of the other responses ("Moderately," "Slightly," or "Not at All") are coded to 0.

[14] Women, older people and risk averse respondents are more likely to rate GM foods as important, as are those with higher values on a six-item Need for Cognition scale (all ps < .01). Relative to independents, neither Democrats nor Republicans were more likely to identify GM foods as an important issue (p = .13 and .27, respectively).

heed the corrective message provided in the stimulus. This pattern is shown in Figure 1, which

compares the effect of the corrective message for people who rate the issue as important versus

all other respondents. Accuracy of beliefs regarding safety and nutrition improves among both

groups (as indicated by the height of the grey columns), but the increase in the percentage giving

the correct answer (post-correction) is *halved* among respondents who rate the issue as

personally important. To illustrate, high importance respondents experiences a 7 percentage-

point change in factual beliefs about nutrition (changing from 51% correct to 58% correct). This

difference, while statistically significant, is dwarfed by the analogous shift among people who do

not rate the issue as important (who change from 51% correct to 64% correct for a 14

percentage-point difference). A similar pattern is observed for beliefs about safety, but here the

high importance group has a lower level of baseline accuracy. In models that interact issue

importance with condition indicators (Correction vs. No Correction group), the difference in the

size of correction effect across high and low importance respondents is statistically significant (p

$< .05$ for both).[15]

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[15] A similar pattern in the Difference-in-Differences (D-i-D) appears across the politicized/non-

politicized conditions.

Figure 1. Changes in Factual Beliefs Across Conditions, by Issue Importance

Factual Beliefs about Nutrition

Factual Beliefs about Safety
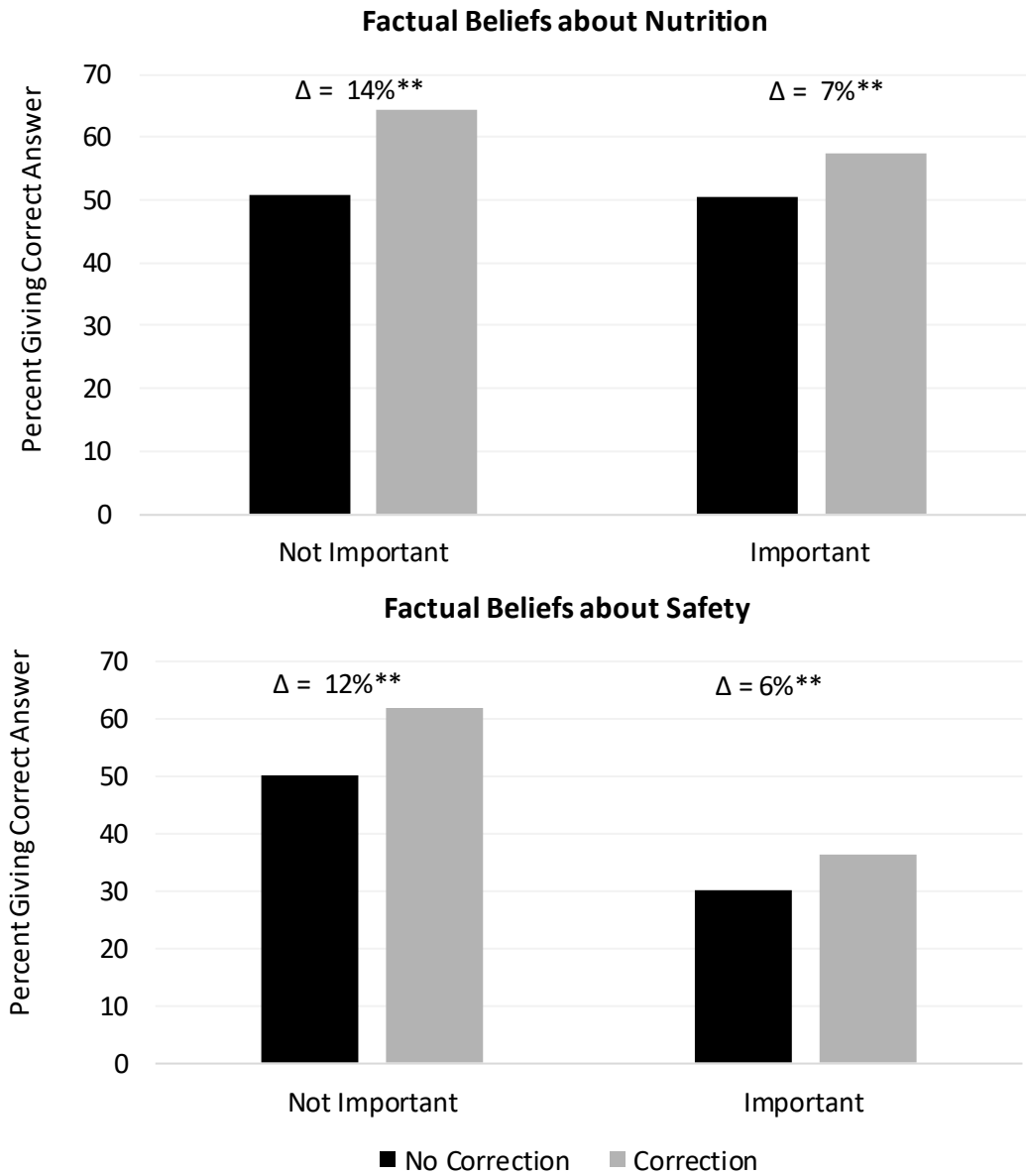
Note: Nutrition and Safe variables range from 0 to 100, with low values indicating incorrect beliefs. Difference-in-Difference for both outcomes significant at $p < .05$.

GM Food Attitudes. Issue importance also moderates the effect of the corrective message on attitudes, measured either in terms of the concern scale or overall favorability (results reported in Appendix tables). Among all respondents, there is a strong main effect for the corrective message in terms of reducing concerns with GM foods and increasing feelings of

favorability ($p < .01$). High importance respondents report feeling more concerned about GM

foods than other respondents, both on the individual topics (safety, environment, business) and

the composite concern scale (all ps $< .01$). Additionally, while those concerns moderate

somewhat in response to the corrective message, there remains a substantial gap across high and

low importance groups (with a significant D-i-D for safety concerns and the overall concern

scale; $p = .05$ and .08 respectively).[16] A similar pattern is observed on the question about overall

favorability toward GM foods, with high importance people being significantly less likely to

change their opinion in response to the corrective message ($p < .05$ on the D-i-D between low

and high importance subjects). In line with work on issue motivations (Mullinix 2016), people

who feel a subjective sense of importance regarding an issue do not process information about

that topic in an unbiased way. To the contrary, attitude involvement produces the motive to resist

information that counters existing views (Lavine, Borgida, and Sullivan 2000, 85; also see

Druckman and Bolsen 2011).[17]

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[16] The D-i-D for the environment and business concerns was in the expected direction but not

significant at conventional levels ($p = .20$ and .30, respectively).

[17] The subjective state of issue importance does not, by itself, predispose a person to

misinformation. Insofar as a person acquires (and then uses) false information to support an

important attitude, that attitude will be resistant to change.

Discussion

Our study showed that a corrective message was successful among Democrats and Republicans who had been primed to think of GM foods in partisan terms, but that this same message was unable to alter the beliefs or attitudes of people who rated the issue as personally important. Given the numerous examples of misinformation related to highly salient, partisan issues—on topics like welfare (Kuklinski et al. 2000), the Iraq War (Prasad et al. 2009), climate change (Johnson 2017), or health care reform (Berinsky 2017)—it is tempting to conceive of misinformation solely as a pathology of political partisanship in the contemporary United States. Yet our study is an important reminder of the human tendency to engage in "attitude protection" on issues that become linked to one's "plans, goals, and cherished values" (Lavine, Borgida, and Sullivan 2000, 85). It has been difficult to identify this effect in past research, however, because partisanship and issue importance often have reinforcing effects (Mullinix 2019, 384). The design of our study reflects a deliberate attempt to eliminate this confound.

Like any empirical endeavor, however, our study has limitations. One weakness is the use of a single data source. Here we remind readers that the Dynata sample is large and national in scope, a notable feature in an era where "population samples remain critical to social-science experimentation" (Mullinix, Leeper, and Druckman 2015, 123). Additionally, there is some precedent for single-experiment studies in situations where a complex design requires a large sample (e.g., Bayes, Druckman, Goods, and Molden 2020).[18] A second limitation of our study

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[18] Two features of our study necessitated a large sample. First, we provided a corrective message to all participants, but manipulated the timing of that message relative to the outcome measures. Second, our study needed sufficient power for tests of moderating effects.

pertains to the manner in which we manipulated politicization. We combined ideological arguments and party cues because our pretesting suggested that this was the most effective way to change people's perceptions of GM foods. This is not the only way to politicize an issue, however, and past studies have employed a variety of techniques for creating polarized conditions (e.g. Bolsen, Druckman, and Cook 2014; Druckman, Peterson, and Slothuus 2013). Unfortunately, there is little conventional wisdom regarding how to manipulate perceptions of polarization, and the success of any given approach may depend on idiosyncratic features of the issue(s) under examination.

Our study also raises several questions about genetically modified foods. In the absence of strong partisan signaling, what is the basis for people's attitudes on this topic (e.g., Kinder 1998)? Moreover, do issues that exist outside of traditional partisan cleavages evolve (Carmines and Stimson 1980) in a different way than issues that are more readily classified on the ideological spectrum? On this point, Wunderlich and Gatto (2015) observe that an important distinction exists between "GMO familiarity" and "scientific understanding," with the former linked to GMO opposition and greater scientific understanding related to higher acceptance of GM products. Notably, however, this distinction is *not* redundant with level of education, as years of formal schooling are an unreliable predictor of attitudes on this issue (Wunderlich and Gatto 2015, 849). According to these authors, one explanation for GM food attitudes rests with the particular information sources people turn to on this issue: "the Internet, informal blog posts written by nonscientific individuals, and conversations shared among friends" (Wunderlich and Gatto 2015, 849).

In the end, our findings imply two conclusions—one hopeful, the other one less so. Even though subjects were exposed to content that polarized the topic of GM foods along partisan lines, Democrats and Republicans were equally willing to correct false beliefs. This pattern implies that a more complicated dynamic—one involving elite rhetoric over time—may underlie partisan-tinged misinformation. Yet when people come to view an issue as personally important and are misinformed about the topic, they resist corrective messages, even those that are highly credible. Indeed, it remains unclear what message characteristic(s) would be effective in this circumstance. Thus, the challenge for scholars seeking to reduce the prevalence of misinformation may be more difficult than previously realized.

References

Bayes, R., Druckman, J.N., Goods, A., and Molden, D.C. (2020). When and how difference motives can drive motivated political reasoning. *Political Psychology*, Forthcoming, doi: 10.1111/pops.12663.

Berinsky, A.J. (2017). Rumors and health care reform: Experiments in political misinformation. *British journal of political science*, *47*(2), 241–262.

Bisgaard, M. (2015). Bias will find a way: Economic perceptions, attributions of blame, and partisan-motivated reasoning during crisis. *The Journal of Politics*, *77*(3), 849–860.

Bisgaard, M. (2019). How getting the facts right can fuel partisan-motivated reasoning. *American Journal of Political Science*, *63*(4), 824–839.

Bolsen, T., and Druckman, J.N. (2015). Counteracting the politicization of science. *Journal of Communication,* 745–769.

Bolsen, T., Druckman, J.N. and Cook, F.L. (2014). The influence of partisan motivated reasoning on public opinion. *Political Behavior*, *36*(2), 235–262.

Boninger, D.S., Krosnick, J.A. and Berent, M.K. (1995). Origins of attitude importance: self-interest, social identification, and value relevance. *Journal of personality and social psychology*, *68*(1), 61–80.

Brody, J.E. (2018). Are GMO foods safe? *New York Times*, April 23.

Bullock, J.G. (2011). Elite influence on public opinion in an informed electorate. *American Political Science Review*, *105*(3), 496–515.

Carnahan, D, Bergan, D.E., and Lee, S. (2020). Do corrective effects last? Results from a longitudinal experiment on beliefs toward immigration in the U.S. *Political Behavior,* DOI: 10.1007/s11109-020-09591-9.

Carmines, E.G. and Stimson, J.A. (1980). The two faces of issue voting. *American Political Science Review*, *74*(1), 78–91.

Cohen, G.L. (2003). Party over policy: The dominating impact of group influence on political beliefs. *Journal of personality and social psychology*, *85*(5), 808–822.

Cuik, D. J., and Berwood A. Yost. (2016). The effects of issue salience, elite influence, and policy content on public opinion. *Political Communication*, 33, 328–345.

Druckman, J.N. (2012). The politics of motivation. *Critical Review*, *24*(2), 199–216.

Druckman, J.N., Peterson, E. and Slothuus. R. (2013). How elite partisan polarization affects public opinion formation. *American Political Science Review, 105*, 57–97.

Ecker, U.K. and Ang, L.C. (2019). Political attitudes and the processing of misinformation corrections. *Political Psychology*, *40*(2), 241–260.

Druckman, J.N., and Bolsen, T. (2011). Framing, motivated reasoning, and opinions about emergent technologies. *Journal of Communication,* 61 (August), 659–688.

Haglin, K. (2017). The limitations of the backfire effect. *Research & Politics*, *4*(3), 1–5, DOI: 10.7910/DVN/1RD4HI.

Jerit, J. and Zhao, Y. (2020). Political misinformation. *Annual Review of Political Science*, *23*: 77–94.

Jerit, J. and Barabas, J. (2012). Partisan perceptual bias and the information environment. *Journal of Politics, 74,* 672–684.

Johnson, D. R. (2017). Bridging the political divide: Highlighting explanatory power mitigates biased evaluation of climate arguments. *Journal of Environmental Psychology*, 51, 248–255.

Kane, J.V. and Barabas, J. (2019). No harm in checking: Using factual manipulation checks to assess attentiveness in experiments. *American Journal of Political Science*, *63*(1), 234–249.

Kam, C.D., and Trussler, M.J. (2017). At the next of observational and experimental research: Theory, specification, and analysis of experiments with heterogeneous treatment effects. *Political Behavior, 39*(4), 789–815.

Kinder, D. E. (1998). Opinion and action in the realm of politics. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), Handbook of social psychology (Vol. 2, 4th ed., pp. 778–867). Boston: McGraw-Hill

Krosnick, J.A. (1990). Government policy and citizen passion: A study of issue publics in contemporary America. *Political behavior*, *12*(1), 59–92.

Kuklinski, J.H., Quirk, P.J., Jerit, J., Schwieder, D. and Rich, R.F. (2000). Misinformation and the currency of democratic citizenship. *Journal of Politics*, *62*(3), 790–816.

Lavine, H., Borgida, E. and Sullivan, J.L. (2000). On the relationship between attitude involvement and attitude accessibility: Toward a cognitive-motivational model of political information processing. *Political Psychology*, *21*(1), 81–106.

Leeper, T.J. and Slothuus, R., 2014. Political parties, motivated reasoning, and public opinion formation. *Political Psychology*, *35*, 129–156.

Lewandowsky, S., Gignac, G.E. and Oberauer, K., 2013. The role of conspiracist ideation and worldviews in predicting rejection of science. *PloS one*, *8*(10), DOI:10.1371/journal.pone.0075637

Lupia, A. (2013). Communicating science in politicized environments. *Proceedings of the National Academy of Sciences, 110*, 14048–14054.

Mullinix, K.J., 2016. Partisanship and preference formation: Competing motivations, elite polarization, and issue importance. *Political Behavior*, *38*(2), 383–411.

Mullinix, K.J., Leeper,T.J. and Druckman, J.N. (2015). The generalizability of survey experiments. *Journal of Experimental Political Science, 2*, 109–138.

Nyhan, B. and Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior*, *32*(2), 303–330.

Prasad, M., Perrin, A.J., Bezila, K., Hoffman, S.G., Kindleberger, K., Manturuk, K. and Powers, A.S. (2009). "There must be a reason": Osama, Saddam, and inferred justification. *Sociological Inquiry*, *79*(2), 142–162.

Rahn, W.M. (1993). The role of partisan stereotypes in information processing about political candidates. *American Journal of Political Science*, *37*(2), 472–496.

Thorson, E. (2016). Belief echoes: The persistent effects of corrected misinformation. *Political Communication*, *33*(3), 460–480.

Weeks, B.E. (2015). Emotions, partisanship, and misperceptions: How anger and anxiety moderate the effect of partisan bias on susceptibility to political misinformation. *Journal of communication*, *65*(4), 699–719.

Weeks, B.E. (2018). Media and political misperceptions. *Misinformation and mass audiences*, ed. BG Southwell, EA Thorson, L Sheble. pp. 140–56. Austin: Univ. Texas Press.

Wood, T. and Porter, E. (2019). The elusive backfire effect: Mass attitudes' steadfast factual adherence. *Political Behavior*, *41*(1), 135–163.

Wunderlich, S. and Gatto, K.A. (2015). Consumer perception of genetically modified organisms and sources of information. *Advances in Nutrition*, *6*(6), 842–851.

Zhou, J. (2016). Boomerangs versus javelins: how polarization constrains communication on climate change. *Environmental Politics*, *25*(5), 788–811.

This Appendix presents the stimuli, question wording and Appendix Tables referenced in the text.

Stimuli Wording

<u>Placebo Story</u>

"Can Wearable Fitness Devices Help Predict Flu Outbreaks?"

Fitbits and other wearable devices may prove to be helpful tools for tracking the spread of flu and other infectious diseases.

In research recently published The Lancet, scientists demonstrated that information on resting heart rate and sleep patterns captured by wearable devices such as smartwatches and fitness trackers correlated closely with flu case numbers estimated by the Centers for Disease Control and Prevention (CDC).

When someone has an infectious disease like the flu, resting heart rates tend to spike and sleep duration tends to be longer than normal. Because these physiological factors are continuously measured by Fitbit devices, researchers believe the real-time measures of heart rates and sleep can enhance influenza surveillance.

Conditions 1 and 4 (Non-politicized; 134 words)

"State Legislatures Move to Expand GM Foods"

Several state legislatures have passed legislation expanding the use of genetically modified (GMs) crops. Lawmakers in these states argue that GM foods help to diversify American agriculture.

Nevertheless, there are concerns about the safety of GM foods and how they compare nutritionally to their non-GM counterparts. Some consumer groups worry that genetically modified foods are not safe for babies and children whose bodies are still developing. Opponents also claim that GM foods have fewer nutrients than conventionally grown foods.

Additionally, GM foods are a relatively new development, which means there still are questions about the overall impact of bioengineering. Some are opposed on ethical grounds, saying it is wrong to manipulate the genetic material of any kind of organism, even a plant. As a result, many consumers avoid products that come from altered crops.

Conditions 2 and 5 (Politicized-liberal; 136 words)

"State Legislatures Move to Expand GM Foods"

Several state legislatures have passed legislation expanding the use of genetically modified (GMs) crops. Lawmakers in these states argue that GM foods help to diversify American agriculture.

Nevertheless, there are concerns about the safety of GM foods and how they compare nutritionally to their non-GM counterparts. Some consumer groups worry that genetically modified foods are not safe for babies and children whose bodies are still developing. Opponents also claim that GM foods have fewer nutrients than conventionally grown foods.

Additionally, the issue of GM foods has become a topic of partisan debate and increasing numbers of liberal voters oppose GM products. Environmental groups are worried about the

effect of GM foods on the environment, particularly the risk that "super crops" will damage the surrounding ecosystem. Consumers and the environment will suffer while the agricultural industry profits.

Conditions 3 and 6 (Politicized-conservative; 136 words)

"State Legislatures Move to Expand GM Foods"

Several state legislatures have passed legislation expanding the use of genetically modified (GMs) crops. Lawmakers in these states argue that GM foods help to diversify American agriculture.

Nevertheless, there are concerns about the safety of GM foods and how they compare nutritionally to their non-GM counterparts. Some consumer groups worry that genetically modified foods are not safe for babies and children whose bodies are still developing. Opponents also claim that GM foods have fewer nutrients than conventionally grown foods.

Additionally, the issue of GM foods has become a topic of partisan debate and increasing numbers of conservative voters oppose GM products. Business groups are worried about the regulation of GM foods, particularly rules that dictate how farmers grow GM crops. The pseudoscience underlying GM foods make U.S. agricultural products less competitive than products in other countries.
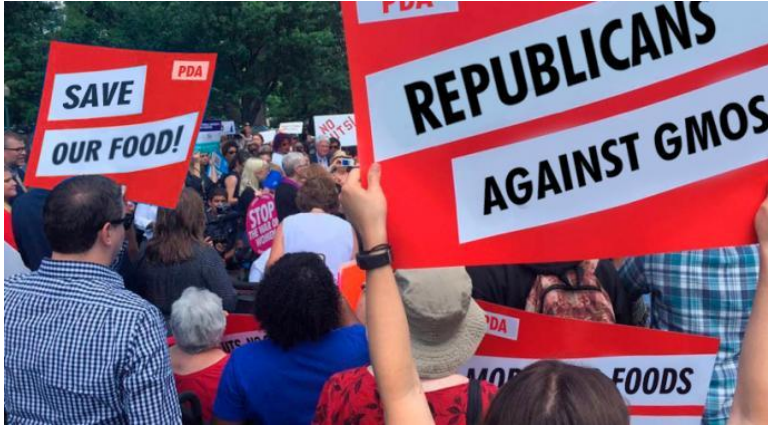
Groups 1-3 receive correction after key outcomes; Groups 4-6 receive correction immediately after distractor items.

Prior to reading the correction, respondents saw this preamble: "In the desire to get news out, the media sometimes report information that turns out to be inaccurate. On the next page, you will see a correction related to one of the stories you just read."

Correction (99 words)

"Getting it Right on GMOs"

Data from the United States Department of Agriculture shows that GM seeds have been widely adopted since their introduction in the mid-1990s. After years of increasing use, almost all corn, soy, and cotton in the U.S. are now genetically modified.

After 25 years of research and development on genetically modified crops, there are no known nutritional differences between GM foods and their non-GM counterparts. In addition, the National Academies of Science, Engineering and Medicine (NASEM) has stated that GM products are safe. Genetically modified foods have been consumed for more than two decades without a single food safety incident.

Question Wording

Manipulation Checks

In the story you just read, policy change on genetically modified foods was taking place in

<1> state legislatures
<2> the U.S. Supreme Court
<3> the U.S. Congress
<4> a state-level ballot proposition

In the image of the story you just read, the protest against genetically modified foods was being lead by:

<1> Democrats
<2> Republicans
<3> Independents
<4> Non-partisan groups

Main Outcomes

Please indicate whether each of the following statements are true or false. Just give your best guess and do not use any outside sources to look up the answers.
Sliding scale with four labeled response options: Definitely True; Probably True; Probably False; Definitely False

[Nutrition] Genetically modified foods have the same nutritional value as non-GM foods. (T)

[Safe] Genetically modified foods pose a health hazard to consumers. (F)

[GM_attitudes] How much do you agree or disagree with the following statements? (7 point favorable-unfavorable response options)

"I am concerned about the health effects of genetically modified foods."
"There are too many environmental risks associated with genetically modified foods."
"Government regulation of genetically modified foods will harm American agriculture."

[OverallOpinion] Overall, how favorable or unfavorable is your opinion toward genetically modified foods? (7 point favorable-unfavorable response options)

Table A-1. Effect of Corrective Message on Factual Beliefs, Moderated by Partisanship

	Nutrition			Safe		
	Non-Pol Politicized	Politicized Liberal	Politicized Conservative	Non-Pol Politicized	Politicized Liberal	Politicized Conservative
Condition	12.77 **	11.67 **	9.53 **	12.18 **	9.96 **	8.32 **
	(3.19)	(2.71)	(2.41)	(3.20)	(2.70)	(2.99)
Party ID	-0.76	1.00	-0.99	-0.14	-3.20	-0.63
	(3.11)	(2.94)	(2.82)	(3.12)	(2.93)	(2.99)
Condition X Party ID	-2.79	-0.01	6.22	-1.37	0.91	3.21
	(4.47)	(4.14)	(4.11)	(4.47)	(4.13)	(4.35)
Constant	50.87 **	49.15 **	52.04 **	40.46 **	42.22 **	43.36 **
	(2.22)	(1.89)	(1.72)	(2.23)	(1.88)	(1.82)
N	624	776	769	624	776	769
Adjusted R2	0.04	0.04	0.04	0.04	0.03	0.02
Marginal Effect of Treatment						
at PID=0	12.77 **	11.67 **	9.53 **	12.18 **	9.96 **	8.32 **
	(3.19)	(2.71)	(2.41)	(3.20)	(2.70)	(2.99)
at PID=1	9.97 **	11.66 **	15.75 **	10.81 **	10.87 **	11.53 **
	(3.12)	(3.13)	(3.33)	(3.13)	(3.12)	(3.53)

Note: Cell entries are coefficients and standard errors from OLS regression models where the DV is either *Nutrition* or *Safe*. In models for Non-Politicized condition, PID is a dichotmous indicator (Rep=1; Dem=0; all others coded to missing). In models for Politicized conditions, PID is a dichotomous indicator representing Democrats (=1; all others =0 for Politicized-Liberal) or Republicans (=1; all others =0 for Politicized-Conservative). ** $p < .01$ * $p < .05$

Table A-2a. Effect of Corrective Message on Concern Attitudes, Moderated by Partisanship

	Concern–Safety			Concern–Environment			Concern–Business		
	Non-Pol Politicized	Politicized Liberal	Politicized Conservative	Non-Pol Politicized	Politicized Liberal	Politicized Conservative	Non-Pol Politicized	Politicized Liberal	Politicized Conservative
Condition	-0.52 *	-0.46 **	-0.41 *	-0.67 **	-0.60 **	-0.38 *	-0.36 #	-0.23	-0.33 #
	(.21)	(.17)	(.16)	(.19)	(.16)	(.15)	(.19)	(.16)	(.15)
Party ID	-0.11	0.23	-0.07	-0.12	0.28	-0.04	0.00	0.11	0.57 **
	(.20)	(.18)	(.19)	(.19)	(.18)	(.18)	(.18)	(.17)	(.17)
Condition X Party ID	0.20	-0.12	0.00	0.22	0.07	-0.01	0.40	-0.14	-0.23
	(.29)	(.26)	(.27)	(.27)	(.25)	(.26)	(.26)	(.24)	(.25)
Constant	4.94 **	4.86 **	4.86 **	4.82 **	4.63 **	4.58 **	4.39 **	4.50 **	4.36 **
	(.14)	(.12)	(.11)	(.13)	(.11)	(.11)	(.13)	(.11)	(.11)
N	624	776	769	624	776	769	624	776	769
Adjusted R2	0.01	0.02	0.01	0.01	0.03	0.01	0.01	0.01	0.01

Marginal Effect of Treatment

Party=0	-0.52 *	-0.46 **	-0.41 *	-0.67 **	-0.60 **	-0.38 *	-0.36 #	-0.23	-0.33 *
	(.21)	(.17)	(.16)	(.19)	(.16)	(.15)	(.19)	(.16)	(.15)
Party =1	-0.32	-0.58 **	-0.41 #	-0.46 *	-0.53 **	-0.39 #	0.04	-0.37 *	-0.56 **
	(.20)	(.20)	(.22)	(.19)	(.19)	(.21)	(.19)	(.18)	(.21)

Note: *Note*: Cell entries are coefficients and standard errors from OLS regression models where the DV is the three-item concern battery (see text for wording). In models for Non-Politicized condition, PID is a dichotmous indicator (Rep=1; Dem=0; all others coded to missing). In models for Politicized conditions, PID is a dichotomous indicator representing Democrats (=1; all others =0 for Politicized-Liberal) or Republicans (=1; all others =0 for Politicized-Conservative). ** $p < .01$ * $p < .05$ # $p < .10$

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Table A-2b. Effect of Corrective Message on Favorability Attitudes Moderated by Partisanship

	Non-Pol Politicized	Politicized Liberal		Politicized Conservative	
Condition	-0.27	-0.35	*	-0.37	*
	(.20)	(.17)		(.16)	
Party ID	-0.08	-0.02		-0.34	#
	(.20)	(.19)		(.18)	
Condition X Party ID	0.09	-0.23		0.19	
	(.28)	(.26)		(.26)	
Constant	4.20	4.26		4.22	
	(.14)	(.12)		(.11)	
N	624	776		769	
Adjusted R2	0.00	0.01		0.01	

Marginal Effect of Treatment

	Non-Pol Politicized	Politicized Liberal		Politicized Conservative	
Party=0	-0.27	-0.35	*	-0.37	*
	(.20)	(.20)		(.20)	
Party =1	-0.19	-0.58	**	-0.19	
	(.20)	(.20)		(.21)	

Note: *Note*: Cell entries are coefficients and standard errors from OLS regression models where the DV is favorability toward GM foods (high values indicate unfavorable attitudes). In models for Non-Politicized condition, PID is a dichotmous indicator (Rep=1; Dem=0; all others coded to missing). In models for Politicized conditions, PID is a dichotomous indicator representing Democrats (=1; all others =0 for Politicized-Liberal) or Republicans (=1; all others =0 for Politicized-Conservative).

Table A-3. Effect of Corrective Message on Factual Beliefs, Moderated by Issue Importance

	Nutrition		Safe	
Correction Condition	13.80	**	11.69	**
	(1.49)		(1.40)	
Issue Importance	-0.15		-20.05	**
	(1.64)		(1.54)	
Condition X Importance	-6.80	**	-5.27	*
	(2.34)		(2.21)	
Constant	50.66	**	50.07	**
	(1.06)		(.99)	
N	2340		776	
Adjusted R2	0.04		0.04	
Marginal Effect of Treatment				
at Importance=0	13.80	**	11.69	**
	(1.49)		(1.40)	
at Importance=1	7.01	**	6.43	**
	(1.81)		(1.70)	

Note: Cell entries are coefficients and standard errors from OLS regression models where the DV is either *Nutrition* or *Safe*. Importance is a dichotomous indicator where 1= respondent named GM foods "Very" or "Extremely" importance; 0= all other responses.
** $p < .01$ * $p < .05$

Table A-4. Effect of Corrective Message on Attitudes Moderated by Issue Importance

	Concern– Safety		Concern– Environment		Concern– Business		Concern Scale		Favorability	
Correction Condition	-0.51	**	-0.50	**	-0.30	**	-0.44	**	-0.43	**
	(.09)		(.08)		(.09)		(.07)		(.09)	
Issue Importance	1.55	**	1.38	**	0.84	**	1.26	**	0.05	
	(.09)		(.09)		(.09)		(.08)		(.10)	
Condition X Importance	0.26	*	0.17		0.14		0.19	#	0.32	*
	(.14)		(.13)		(.13)		(.11)		(.15)	
Constant	4.24	**	4.09	**	4.13	**	4.15	**	4.15	**
	(.06)		(.06)		(.06)		(.05)		(.07)	
N	2340		2340		2340		2340		2340	
Adjusted R2	0.22		0.19		0.08		0.22		0.01	
Marginal Effect of Treatment										
at Importance=0	-0.51	**	-0.50	**	-0.30	**	-0.44	**	-0.43	**
	(.09)		(.08)		(.09)		(.07)		(.09)	
at Importance=1	-0.25	*	-0.33	**	-0.16		-0.25	**	-0.12	
	(.10)		(.10)		(.10)		(.08)		(.11)	

Note: Cell entries are coefficients and standard errors from OLS regression models where the DV is either *Concern* items or *Favorability*. Importance is a dichotomous indicator where 1= respondent named GM foods "Very" or "Extremely" importance; 0= all other responses.   ** $p < .01$ * $p =< .05$ # $p < .10$