



Calling “Gevald”: on the emergence of negative election forecasts in partisan communications

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Abstract

Individuals were found to anonymously predict positive election outcomes for their preferred candidate. Yet, there is little scientific knowledge about election predictions made in the context of same-camp political communications (i.e., partisan communications) that are presumably meant to encourage other supporters. In five studies of low-information elections and a study of hypothetical U.S. elections ($n=1889$), we found that people tended to communicate favorable forecasts to others sharing their view, compared to the neutral point and to the actual election outcomes. On the other hand, negative framing reduced the positivity of forecasts in these communications to the extent that it led most participants to predict an election loss. This occurred in response to a single addressee acting discordantly and even more strongly when the election results were phrased as a drop. When both positive and negative framing options were available, this still negativity affected participants’ predictions even though only a minority selected the negative framing option. Thus, people tend to make optimistic election predictions in partisan communications, but this pattern is easily manipulable given subtle changes in the forecasting prompt, either by negative framing or selectable positive and negative framing.

Keywords Political communications · Negativity · Positivity · Fake news · False consensus · Loss aversion

JEL codes D72 · D83 · D84

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1 Introduction

Partisan communications, namely political communications directed to members of the same camp, are often considered to be optimistic with respect to the success of election candidates (Hollander, 2014; Searles et al., 2016, 2018; Smith & Searles, 2014), yet there are some rare cases where politicians used pessimistic communications as part of Get-Out-the-Vote campaigns. For example, one hour before the end of the Israeli elections on April 9, 2019, Benjamin Netanyahu, then prime minister, issued a video that his opponents (the left-center wing) have an election turnout rate of 61% compared to his own party's rate of only 42% and that his party will lose if this is not changed. At the same time, opposite messages were issued by ultra-right and leftwing parties (Bender et al., 2019). Get-Out-the-Vote campaigns focusing on negative election forecasts are referred to as "Gevald"¹ campaigns (Meor, 2008). A major caveat to this literature, however, is that all studies and surveys that we are aware of focused on election forecasts made either by political leaders or the media, therefore these observations are susceptible to (self- and other-) selection biases.

The few studies that examined the public's election forecasts also observed optimistic predictions yet these studies focused on anonymous predictions rather than communications with other voters (Hollander, 2014; Searles et al., 2018). For example, Hollander (2014) found that prior to the 2012 US general election, 97% of Obama supporters predicted that Obama would be victorious, while among Romney supporters 78% predicted the opposite; however, these results do not reflect individuals' communication patterns but only their stated beliefs. Moreover, it would be unethical to experimentally manipulate actual communications with others that could affect a major election. Therefore, in the current study we reverted to an election game using classical minimal-information elections (following Fleitas, 1971; Rapoport & Bornstein, 1987). In addition to five studies of election games, we also conducted a hypothetical study of actual elections. In all of these studies, we examined whether voters display positive election predictions in partisan communications, or call "Gevald", and under what conditions these biases emerge. In particular, starting from Study 2 we focused on negative framing following the style of the Israeli Gevald campaigns noted above.

1.1 Theoretical background

Several known regularities in psychology and economics suggest that individuals make positive forecasts in partisan communications. First, people tend to project their own (intended) choices onto others and estimate the probability that others will act like they do as higher than that implied by prior estimates, a phenomenon known as social projection (Krueger, 2013; Robbins & Krueger, 2005). Although stronger in laboratory groups, social projection was found to emerge for individuals from the

¹ The term is derived from "gevalt", a Yiddish expression of alarm.

same social category, for instance in predicting attitudes of those affiliated with the same political party (Robbins & Krueger, 2005). Social projection is also known as the false consensus effect, which is the implied assumption that one's judgments and choices are common (Krueger & Clement, 1994; Mullen et al., 1985; Ross et al., 1977). Other biases that can lead to positive forecasting are comparative optimism, namely over-confidence in one's success compared to that of others (Weinstein, 1980); an illusion of control (Fleming & Darley, 1989); and more generally, wishful thinking or a desirability bias (Krizan & Windschitl, 2009; though see Bar-Hillel & Budescu, 1995 for a critique).

In addition, even if people's forecasts are not biased, they may still make positive forecasts strategically to harness *others'* biases. Relevant biases include social proof bias, namely the tendency to follow what the large(r) number of social agents select (Cialdini, 1993; Goethals & Darley, 1977; Miller, 1984). For example, Cialdini et al. (1999) found that participants asked to take part without pay in a market survey were highly affected by information regarding their peers' history of such compliance. Another bias that can be exploited by communicating positive forecasts to known supporters is people's relative certainty and trust in preference-matched information (c.f., Festinger, 1957). For instance, respondents viewed polls as more credible when the majority views matched their opinion (Chia & Chang, 2015; Kuru et al., 2017; Madson & Hillygus, 2022).

On the other hand, some theories predict that people should report negative forecasts in partisan communications. One such theory is loss aversion. Under loss aversion, the prospect of losing is much more painful than the prospect of winning is rewarding (Kahneman & Tversky, 1979). Thus, one could argue that communicating a possible loss of the in-party candidate might increase recipients' motivation to reduce this loss compared to their motivation to maintain a gain (in the event of a win). While loss aversion has been recently contested (see Yechiam & Hochman, 2013; Gal & Rucker, 2018; Yechiam, 2019), it was consistently found that even minor losses can produce an increase in arousal and attentional investment (see reviews in Taylor, 1991; Baumeister et al., 2001; Yechiam & Hochman, 2013): this is known as "loss attention" (Yechiam & Hochman, 2013). In a political context, if the situation appears to be a losing one, partisan supporters may pay more attention and engage in more election-related efforts than in a winning state of affairs, which suggests a strategic value for making negative forecasts to increase like-minded voters' engagement. In addition, the fact that one's favorite party is believed to be losing may paradoxically increase the utility of voting for it if the forecast is used as a reference point for calculating the utility (Lang & Lang, 1984). Specifically, in relative terms, if underdogs win then voters should experience a large utility gain, whereas the underdog's losing does not hurt as much, because the candidate is more likely to lose anyway.²

² In addition, there are some conditions where underdogs are favored. While people often choose to emphasize their associations with those who are successful (Campbell & Tesser, 1986), when underdogs are perceived as having lower resources than their competitors they tend to be preferred (Lammers et al., 2022; Vandello et al., 2007). However, this type of motivation is not relevant for low-information elections like the ones we study.

What would be a rational forecast level that would have the most influence in this setting? This seems to depend on the stability of the recipients' voting preference. Assuming a fixed voting preference, the forecast in partisan communications can merely encourage the person to vote (vs. not voting). According to game-theoretical models of elections (e.g., Palfrey & Rosenthal, 1983; Rapoport et al., 1989), conveying to a person believed to be stably sharing one's political view that elections are in a 50:50 state, should yield the highest incentive to vote because of the high criticality of each individual's vote in this case. Therefore, given two parties the 50% forecast would be the rationally appropriate forecast. However, in reality people's votes can sometimes be unstable and sensitive to the base rate. For instance, positive polls tend to increase support for the winning party (see Kiss & Simonovits, 2014; Morton et al., 2015; Madson & Hillygus, 2022). In the election games below this is implemented as increased incentives for those holding the consensus view. In this case, because the forecast provides information about the base rate, then rationally, it should be positive. The exact rational forecast therefore depends on the recipients' characteristics.

1.2 The current studies

In six studies, we examined what constitutes sufficient conditions for the emergence of negative election forecasts in partisan communications during low-information elections (Studies 1–5) as well as in hypothetical U.S. elections (Study 6). As noted above, low-information elections provide an experimental paradigm to evaluate the regularities of election communications without substantial ethical issues. In these elections, participants win an amount of money if the majority supports their own electoral choice (e.g., Rapoport & Bornstein, 1987).

The elections we implemented included an initial non-incentivized vote (i.e., a poll) designed to gauge participants' choices between two objects prior to an incentivized vote which they knew is forthcoming.³ Immediately after the initial poll, participants could send a message to a couple of participants who voted the same as they did. This message included a forecasted belief about the percentage of individuals who will vote favorably in the consequential election. The message can potentially be used as a persuasion tool to increase the likelihood that others will maintain their poll vote (and thus increase the chance of obtaining the reward). Our design somewhat differs from Rapoport and Bornstein's studies which included open pre-election negotiation between players (e.g., Bornstein & Rapoport, 1988; Bornstein et al., 1989).

Table 1 provides an overview of the studies. We evaluated the positivity/negativity of forecasts given a number of factors that may influence them. These factors included the likelihood that participants will stick to their vote (probable

³ Although the initial poll was not incentivized it was conducted as a first phase of the incentivized election which participants were informed of immediately prior to the initial poll. Therefore, we see this as a "trial run" for the incentivized election (similar to a poll in actual elections) rather than a simple indication of internal motivation.

Table 1 Main differences between the study designs for Studies 1–5 of minimal-information elections

Study	Free voting in the election phase (phase 2)	Baseline information (50:50) provided	Voting version	Main independent variable
1a	Yes	No	Colors/shapes	–
1b	No (could abstain)	No	Colors/shapes	–
1c	Yes	Yes	Colors/shapes	–
2	Yes	Yes	Colors	Framing
3	Yes	Yes/No (in different conditions)	Colors	Baseline information (on top of framing)
4	Yes	Yes	Colors	Framing: general vs. social
5	Yes	Yes	Colors	Selectable framing

vs. guaranteed),⁴ information about the base rate (i.e., the expected closeness of the election), and most importantly negative framing of the message delivered to participants. Framing, particularly positive and negative framing, is among the most heavily referenced paradigms used to guide communication research (Nabi et al., 2020). Framing was previously argued to affect political polling (e.g., Blauwkamp et al., 2018; Lakoff, 2010; Schumacher & Öhberg, 2020), though what is referred to as framing in these studies is often confounded with the available base rate information.⁵ Moreover, negative framing was explicitly used in the Israeli Gevald campaigns mentioned above, although of course it is not clear whether it had any causal influence. We examined whether negative framing might overcome potential biases and rational considerations that lead to optimistic predictions in election communications.

We specifically implemented a novel form of social framing which we refer to as “if you don’t”. This follows the Israeli Gevald campaigns mentioned above and pertains to forecasting what would be the election results if the message recipient will not vote in favor. Normatively, given a large enough population and no communication between participants, a single recipient’s behavior should have minimal influence on the electoral outcomes. However, the “if you don’t” framing might lead communicators to insufficiently adjust their forecasts given the negative anchor pertaining to a single individual’s behavior (Epley & Gilovich, 2006; Eroglu & Croxton, 2010; Tversky & Kahneman, 1974). In addition, the “if you don’t” framing might lead participants to adopt a mindset in which they try to scare or retribute the recipient by issuing a negative forecast. In other words, it might

⁴ While in political science the definition of “same side” is rather difficult to model (c.f., Bølstad & Dinas, 2017), our experimental paradigm can test them by targeting a smaller or a larger circle of potential supporters.

⁵ For example, in Schumacher and Öhberg (2020) positive/negative framing was manipulated by showing a positive or a negative trend compared to different previous polls, but this provides different information about the trend.

produce “karmic forecasts”, where a wrongdoer is typically forecasted to meet bad outcomes (Mata & Simao, 2020).

As noted in Table 1, this form of framing is introduced in Study 2. In Study 3 we examined its robustness to baseline information, while in Study 4 we contrasted the “if you don’t” framing with the sheer effect of general negative framing, namely phrasing the election forecast as a drop (“the voting rates will go down to...”). In Study 5 we evaluated the effect of a more open prompt where both negative and positive framing options are available to the communicator. This same open prompt was also used in Study 6 which evaluated the generalizability of the findings to hypothetical US elections.

We report all manipulations, measures, and exclusions in these studies. To briefly foreshadow the results, we find that Gevald-like behavior did not emerge with no framing, but did emerge quite strongly in negatively framed messages, either under general framing or given a single supporter’s “misbehavior”, namely under social negative framing. When both negative and positive framing options were available, this also reduced the positivity of forecasts, even though only a (substantial) minority used negative framing.

2 Studies 1a–c: Pilots

In three sub-studies, each conducted separately, we examined partisan forecasting in a low-information election. In each study we implemented a different low-information environment to gauge participants’ reactions without formally comparing different conditions. A more confirmatory approach was taken in subsequent studies (Studies 2–6). The main differences between studies are shown in Table 1 and outlined in detail in the methods section below. Very briefly, in Study 1b participants were not allowed to change their vote from the poll to the election, while in Study 1c they received additional prior information that the election-race is tight (50:50) before making their prediction.⁶ In these initial studies we did not have unidirectional predictions as theoretical accounts (reviewed in the introduction) suggest the possibility of either a positivity or a negativity bias in forecasting.

2.1 Method

2.1.1 Participants

The project data is available at <https://osf.io/ez8gb/>. No studies in this manuscript were preregistered. All studies were conducted with Prolific Academic workers who resided in the United States, stated that English was their first language, and had an approval rate of at least 95%. Higher approval rates on Prolific are associated

⁶ Base-rate information may reduce the false consensus effects (Desai et al., 2022; Marks & Miller, 1987) and thus decrease the positivity of forecasts but, on the other hand, may also reduce noise and therefore accentuate any relevant psychological bias.

with less dishonest behavior (Schild et al., 2019). We aimed for at least 80% power given a small to medium effect size (Cohen's $d=0.3$), which requires 90 participants per study/condition. Hence, in all studies we set the number of participants to 100 per study/condition to allow dropouts. The total number of participants in the pilot studies was 99 in Studies 1a and 1c, and 98 in Study 1b (due to dropout). This pertains to phase 1 of the studies which included partisan communication. Additional dropouts in phase 2 are presented in the supplementary section Table S1. Across studies 1a–c, 49.8% of the participants were female, 49.4% were male, and 0.7% others. Participants' average age was 35.6 ($SD=11.0$), ranging from 18 to 65 years. Study-specific demographics appear in the Supplementary section. All participants provided informed consent statements, and all studies were ethically approved by the authors' university ethics committee. Participants received a fee of \$0.7 for completing phase 1 of the studies and an additional \$1 for completing phase 2 which included the consequential vote, plus a possible \$1 bonus, as described next.

2.1.2 Task

The experimental task consisted of a two-phase low-information election (conducted in two separate sessions): a non-consequential poll and a consequential voting phase. Immediately after the poll, participants could compile a message to a person who made the same voting choice as they did, and this message included a forecast of the election results. The complete instructions appear in the [Appendix](#).

The task procedure was as follows. In the first session participants were first informed about the general framework of the study which involved identical decisions made in two sessions, and that in order to get the additional \$1, in the second session they would need to select the option that most people chose in that session. They were next asked to choose between two options which were either a triangle and a circle (for half of the participants, randomly drawn) or a blue and a green rectangle (for the remaining half), while being reminded that this decision will not be incentivized in the current session but it will be incentivized in the next session. In Study 1b they were further told that in the next session, only the option they selected in this session will be available to them (namely, the other option will not be available), though they'll be able to abstain. Study 1b is therefore roughly analogous to a Get-Out-the-Vote campaign for renowned supporters.

Participants next made their choices between two options. These options' images are presented in the [Appendix](#). After making their initial choice in session 1, participants in all studies were informed that they could send a message to 1–5 other participants who chose the same as they did, which will be presented before the consequential vote in the next session. In Study 1c participants were further informed that we ran a pilot study regarding these specific options with 100 participants and that the results indicated that votes were not significantly different from 50% (which was indeed the case in Study 1a that was conducted prior to Study 1c). In Study 1a and 1b, this information was not given. In Studies 1a and 1c it was indicated that the message will be read just before the recipients make their selection in session 2, whereas in Study 1b it was indicated that the message will be presented a day prior. In all studies, participants could also decide not to send a message to others.

Table 2 Descriptive characteristics of forecasts in Study 1a–c

Study	Voting version	Poll outcomes in percentages	% Sent forecast message	Mean forecast for preferred vote (percentages, SE)	Mean percent voted for preferred voted
1a	Colors	53.1 blue	79.6	65.0 (2.4)	52.2
	Shapes	62.0 circle	82.0	65.6 (1.9)	57.9
1b	Colors	63.3 blue	81.6	71.5 (2.5)	51.7
	Shapes	61.2 circle	83.7	71.5 (2.0)	53.0
1c	Colors	60.8 blue	78.4	60.4 (1.6)	42.7
	Shapes	64.6 circle	83.3	61.3 (1.9)	38.8

The main analysis compared the mean forecast for individuals' preferred vote versus the actual percent of votes for the preferred vote (the two rightmost columns)

Participants were sent a single invitation to take part in the next session of the study (phase 2) which took place three days after the first phase. In Study 1b this invitation also contained a randomly chosen message compiled by another participant who made the same poll selection as they did. In studies 1a and 1c participants were presented with this message at the beginning of phase 2 session. Because of the imperfect show-up rates in phase 2 for a small proportion of the participants of phase 1 (3.8% across studies) the message was not shown to other participants. After being presented with the message, participants again chose between the same two options. In Studies 1a and 1c these were the same options as in phase 1, while in Study 1b participants chose between the previously selected option and abstaining. Abstaining participants could earn the participation fee but not the additional \$1 bonus. Finally, participants completed some demographic questions, including a political preference questionnaire (Pennycook et al., 2022), and a brief numeracy test (Lipkus et al., 2001) which was administered for descriptive purposes.

2.2 Results

Participants' descriptive characteristics are shown in Table 2. In all three studies there was a slight tendency to vote for blue over green and circle over triangle in the initial poll, which was not significant in any of the studies (binomial p 's ≥ 0.06). Also, most participants (81.4% across studies) chose to send a message to others. The distribution of the forecasts is presented in Fig. 1. The mean forecasts in all studies were positive, with an average of 65.9% for the participant's preferred choice. Across voting versions (shapes vs. colors), the mean forecast for one's preferred choice was 65.3% in Study 1a (above 50%: $t(79)=10.1$, $p<0.001$), 71.5% in Study 1b (above 50%: $t(80)=13.6$, $p<0.001$), and 60.9% in Study 1c (above 50%: $t(79)=8.67$, $p<0.001$). The rate of those who gave forecasts below 50% was only 3.3% (6.3% in Study 1a, 1.2% in Study 1b, and 2.5% in Study 1c; altogether, 9 participants).

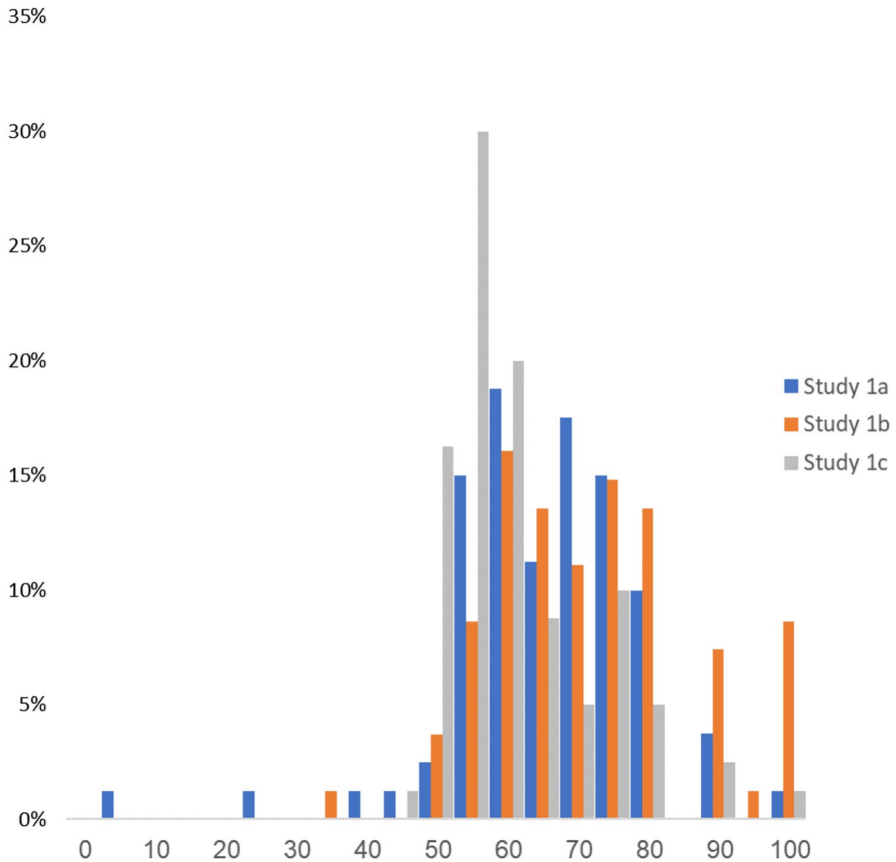


Fig. 1 Study 1a–c election forecasts. Histograms for each study, pooled across the voting versions (colors/shapes)

One could argue, though, that the positivity of forecasts might have been affected by the slight preference towards one of the options. Thus, we also used the actual consequential vote outcomes as a benchmark. These are based on the votes of those who showed up in the election phase (Supplementary Table S1 presents the voting turnaround rates). In Study 1a the average poll selection was voted for by 55.2% of the participants, while forecasts were significantly higher at 65.3%, $t(79)=3.84$, $p<0.001$. In Study 1b the average poll selection was voted for by 52.3% of the participants, which was also below the forecast of 71.5%, $t(80)=10.33$, $p<0.001$. Finally, in Study 1c, the poll selection was voted for by only 40.7% of the participants, while the forecast was 60.9%, $t(79)=5.26$, $p<0.001$.

As indicated in Table 2, positive forecasts also emerged for both “sides of the camp” with respect to the chosen object/color. Across studies, the mean forecast for those selecting circle (which was the winning choice) was 66.9%, but those selecting triangle had a similar mean forecast of 64.8% ($t(120)=0.86$, $p=0.39$). The mean

forecast for those selecting the blue color (the winning choice) was 66.6%, and for those selecting green it was 64.0% ($t(117) = 0.97, p = 0.33$).

Thus, in all three studies there was a robust positive forecasting error regardless of the election outcomes. Indeed, the only noticeable difference between the forecasting distributions presented in Fig. 1 is a somewhat higher 46–50% bin in Study 1c, where participants were informed that the results of the previous pilot were close to 50:50 (we examined this effect in a randomized design in Study 3).

3 Study 2: The effect of “If You Don’t” negative framing

Using minimal-information elections, in Studies 1a–c we found that individuals did not spontaneously make negative forecasts in partisan communications as would be naïvely predicted by theories such as loss aversion and loss attention. We therefore examined whether it would be possible to easily change participants’ communications by a novel negative framing manipulation that we refer to as “if you don’t” framing. This addresses the perceived aftermath of a communication-recipient not voting concordantly. As explained in the introduction, we expected the prompt including this single (negative) individual behavior to negatively affect election forecasts due to insufficient adaptation to the negative anchor and a strategic social response (i.e., “karmic forecasting”; Mata & Simao, 2020). The study included two conditions. In the no-framing condition, we replicated Study 1c in which participants sent an election-forecast message to others after being informed that the election race is close to 50%. In the negative-framing condition, we asked participants to address the event that the message recipient will not vote for their preferred candidate, and indicate their forecasted election outcomes in this circumstance. Given that forecasters were informed that we recruited 100 participants per group, the implied change in one’s forecasts if a single message recipient does not vote in favor should be minor (as in most elections), yet possibly one’s communicated forecasts are more greatly affected.⁷ *We thus predicted a positivity in participants’ forecasts given no framing as in Study 1a–c, while negative framing was expected to increase the negativity of forecasts.*

3.1 Method

3.1.1 Participants

The participants were 197 Prolific Academic workers (with the same characteristics as those in Study 1). A single participant was found to take part in more than one study condition and was removed. The remaining 196 participants were

⁷ One might argue that given that not all participants attended the consequential election phase, a single message addressee “misbehaving” might have an effect greater than 1%. To address this, we compared the forecast to the percentage based on the actual show-up rate, and also in Study 4 we mixed the messages across all study conditions and informed participants that 400 Prolificers were recruited for the study. This led to the same pattern of results as in Study 2.

randomly allocated to the two study conditions, with 98 participants per condition. Across conditions, 50.5% of the participants were female (54% in the no-framing condition, 46% in the negative-framing condition). Participants' average age was 35.5 (SD=11.9) years. Additional demographics of the two conditions appear in the Supplementary section. As in Study 1a–c, participants received a fee of \$0.7 for completing phase 1 and an additional \$1 for completing phase 2 of the study which included the consequential vote, plus a \$1 bonus. The bonus was calculated separately for each condition based on the winning rates.

3.1.2 Task

The voting environment was similar to that of Study 1c with a couple of minor changes. First, the election focused only on the choice between colors (blue vs. green) and not between shapes. Colors were picked because in Study 1a–c votes between colors were closer to 50:50. Secondly, in the communication sent to other participants we added a scrambled version of the message sender's prolific ID (which serves as an anonymous identifier for all tasks performed in Prolific Academic). This was done to increase realism, and also to potentially reduce dishonest behavior (Le Maux & Necker, 2023).

In the no-framing condition, the message pertained to the predicted rate of voting success. In the negative-framing condition, adopting the style of the Israeli Gevald campaigns, the message focused on the event that the addressee will not vote favorably. It was accordingly phrased as follows: "If you will not help us and vote for the <what the participant has chosen (e.g., Blue Color)>, I believe that the voting percentage for <what the participant has chosen> will go down to ____". The complete instructions for both stages appear in the [Appendix](#).

It should be noted that while participants were randomly assigned to the two conditions, messages of one condition were only delivered to the participants of that condition, and each condition had a separate election. A more extensive design where elections are mixed across conditions was adopted in Study 4.

3.2 Results

There was a slight and non-significant preference for the blue over the green color in the initial poll (No-framing condition: 55%, Negative-framing condition: 56%, $\chi^2(1)=0.02$, $p=0.89$). The rate of those who opted to send a message with a forecast to likeminded participants was high (No-framing condition: 70%, Negative-framing condition: 65%, $\chi^2(1)=0.58$, $p=0.44$), though not as high as in Studies 1a–c.⁸ The distribution of the forecasts is presented in Fig. 2. As can be seen, there was a marked difference between the no-framing and negative-framing conditions. In the no-framing condition we replicated the predicted positive forecasting error, with a mean forecast of 62.0% which was significantly larger than 50%,

⁸ This could be due to the addition of the scrambled Prolific ID that was part of the message.

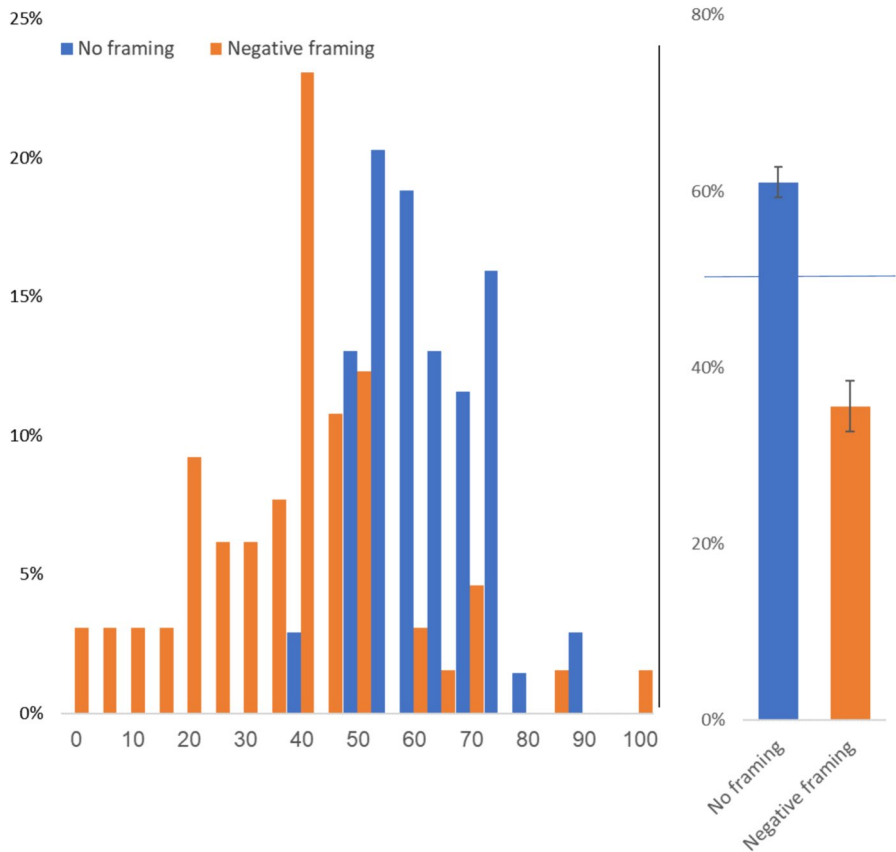


Fig. 2 Election forecasts in Study 2. Left: histograms for the no framing condition (involving a nonconditional forecast) and negative framing condition (a negatively phrased forecast contingent on a negative vote from the recipient). Right: averages and standard errors

$t(68)=9.32$, $p<0.001$. By contrast, in the negative-framing condition the mean forecast was 37.6%, significantly lower than 50%, $t(63)=5.21$, $p<0.001$. In line with our prediction, the forecasts in the two conditions were significantly different, $t(131)=9.02$, $p<0.001$, with an effect size (Cohen's d) of 1.60 which is considered very large. Indeed, in the no-framing condition only 4.3% of the participants made negative forecasts, compared to a full 84.4% in the negative-framing condition.

As in Study 1, we also examined the gap between forecasts and the actual preference rates in the consequential-election phase. In the no-framing condition the overall favorable preference rate was 51.3% compared to a forecast of 62.0%, $t(68)=3.43$, $p<0.001$. In the negative-framing condition, the favorable preference rate was 50.0%, which was above the forecasted rate of 37.6%, as in our initial analysis. In this condition we also used the benchmark of preference rates with a single (phase 2) supporter voting against one's initial selection (48.6%), in line with the conditional phrasing. The forecasts were significantly below this benchmark as well: $t(63)=4.62$, $p<0.001$.

To sum up, while in the no-framing condition we replicated the positive forecasts observed with no framing in Study 1, in the negative-framing condition most participants tended to make forecasts below 50%, resulting in a mean negative election prediction.

4 Study 3: Sensitivity of framing to base rate information

In Study 2 we found that negative forecasts are exhibited in a negative framing condition. However, both conditions of this study also informed participants of the base rate of approximately 50:50 votes. Thus, it could be that being informed that the voting race is close is a necessary condition for the Gevald-like behavior we recorded.

Specifically, being informed that there is a close competition may trigger strategic and dishonest forecasts. Though evidence regarding the effect of competition on dishonest behavior is mixed (Schurr & Ritov, 2016; Muñoz-García et al., 2021), some studies have shown that dishonesty in individuals' communications increases in the course of close competitions (Benistant et al., 2021; Pierce et al., 2013). To the extent that the negative forecasts in the "if you don't" negative-framing condition are strategic, they might be curbed when baseline information is not present. *We accordingly predicted that the Gevald-like behavior induced by negative framing would be reduced in the absence of base-rate information.*

4.1 Method

4.1.1 Participants

The participants were 201 Prolific Academic workers (with the same characteristics as in the previous studies). They were randomly allocated to the two study conditions in which participants either had no information about past voting outcomes or were given such information ($n=102$, 99, respectively). Across conditions, 49.8% of the participants were female (No-information condition: 48.0%, Information condition: 51.5%). Participants' average age was 35.1 (SD=13.0) years. Additional demographics of the two conditions appear in the Supplementary section. Compensation was as in the previous studies.

4.1.2 Task

In the information condition, the experimental task was identical to the negative-framing condition of Study 2. In the no-information condition, we used the same setting but removed the paragraph providing information that the previous election's outcomes were close to 50:50 (see [Appendix](#) for details).

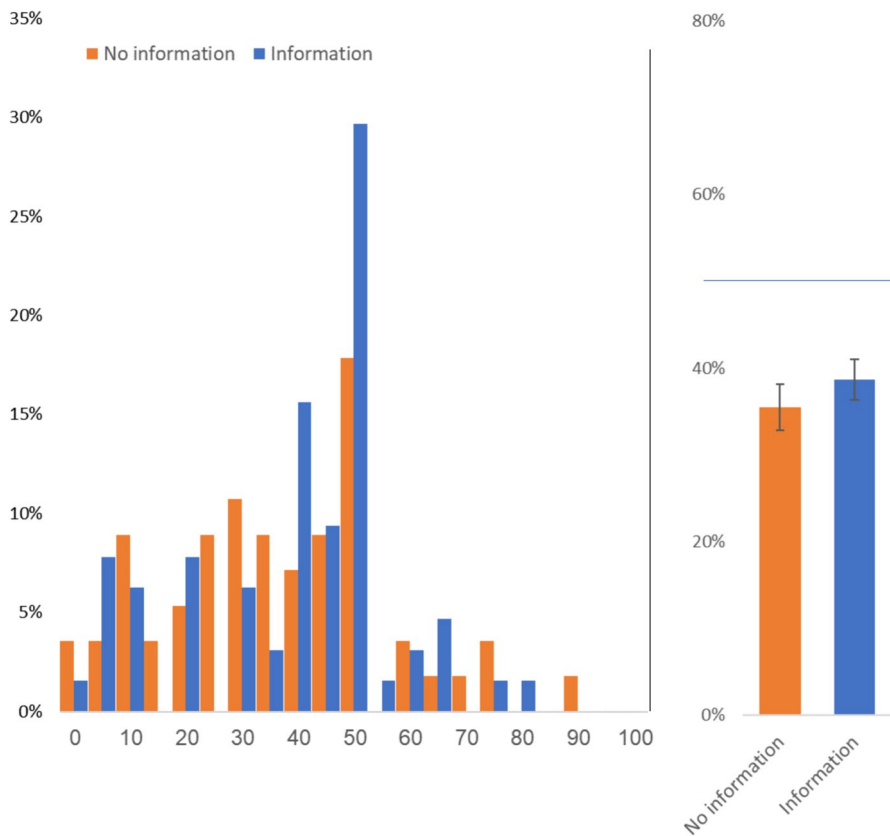


Fig. 3 Election forecasts for the two information conditions of Study 3. Both conditions used negative framing (a negatively phrased forecast contingent on a negative vote from the recipient). Left: histograms for the no information and information conditions. Right: averages and standard errors

4.2 Results

In both conditions, there was a slight preference for the blue over the green color in the initial poll (No-information condition: 58%, Information condition: 60%, $\chi^2(1)=0.06$, $p=0.80$). The rate of those who chose to send a message was similar to that of Study 2 (No-information condition: 55%, Information condition: 65%, $\chi^2(1)=1.98$, $p=0.16$). The distributions of the forecasts are presented in Fig. 3. As can be seen, in both conditions, forecasts tended to be negative. In the information condition, the mean forecast was 38.6%, significantly lower than 50%, $t(63)=4.87$, $p<0.001$, thus replicating the results of Study 2. Similarly, in the no-information condition the mean forecast was 35.5%, significantly below 50%: $t(55)=5.46$, $p<0.001$. Moreover, inconsistently with our prediction, forecasts in the no-information and information conditions were not significantly different, $t(131)=0.90$, $p=0.37$. The rates of those providing negative forecasts in the two conditions were 71.4% and 71.9%, respectively.

Note that in Fig. 3 there appears to be a higher rate of 46–50% forecasts in the information condition compared to the no-information condition. Yet this difference was also not statistically significant, $\chi^2(1)=2.28$, $p=0.13$. Thus, we find that negative framing provides sufficient conditions for the emergence of negative forecasting even when there is no information regarding the 50:50 base rate.

5 Study 4: Disentangling social and general negative framing

The “if you don’t” framing investigated in the previous studies essentially includes two negative aspects. The first involves estimating what would be the election outcomes if the message recipient does not vote in favor. We can label this as social framing, namely, it involves a response to another supporter’s (mis)behavior (Mata & Simao, 2020). However, a second negative aspect implemented in Study 2 and 3 is the perspective induced by the sheer words “will go down to”. Potentially, the latter perspective might induce negative forecasts because it directs forecasters’ attention to a negative eventuality (see e.g., Levin et al., 1998; Teodorescu & Erev, 2014). In the current study, we aimed to examine whether each of these features provides sufficient conditions for the emergence of Gevald-like behavior. *In light of the literature, we predicted that both social and general framing would reduce the positivity of forecasts.*

5.1 Method

5.1.1 Participants

The participants were 400 Prolific Academic workers (with the same characteristics as those in Study 1). They were randomly allocated to the three study conditions of no framing, social framing, and general framing, with 200 participants allocated to the no-framing condition and 100 to each of the framing conditions. Different sample sizes were used in order to obtain a similar rate of participants who will get a message from a framing and a no-framing condition. Within each of the framing/no-framing conditions, participants were further randomly assigned to receive a message either from their condition or from a different condition. If the message was from a framing condition, it was randomly determined whether it would be from the social or general framing condition. Across conditions, 49.9% of the participants were female (No framing: 50.0%, Social framing: 51.0%, General framing: 48.5%). Participants’ average age was 35.9 (SD=12.7) years. Additional demographics appear in the Supplementary section. Payment was as in the previous studies.

5.1.2 Task

The experimental task was similar to that of Study 2 except for the following changes. First, in the social-framing condition the general negative expression was removed. The message therefore indicated: “If you will not help us and vote for the

<what the participant has chosen>, I believe that the voting percentage for <what the participant has chosen> will be ____". In the general negative-framing condition, the social element was removed, and the message indicated as follows: "I believe that the voting percentage for <what the participant has chosen> will go down to ____".

Another minor difference from Study 2 is that participants in all conditions were told that the message would be presented a day before the consequential election phase. The procedure for that was as in Study 1b: the message was delivered in the invitation sent to participants a day before phase 2 of the study (see [Appendix](#) for complete details).

Also, participants were told that 400 Prolificers were recruited for the study, which should further decrease the normative effect of one person's unfavorable vote in the social-framing condition. In line with this, the study included a single election that comprised all study participants, rather than a separate election per condition as in Studies 2 and 3.

5.2 Results

There was a slight preference for the blue over the green color in the initial poll (No-framing condition: 58%, Negative-framing conditions: 57%, $\chi^2(1)=0.04$, $p=0.84$). The rate of those who sent a message with a forecast to other participants was high (No-framing condition: 77%, Negative-framing conditions: 68%, $\chi^2(1)=4.06$, $p=0.04$).⁹

The distributions of forecasts in the different conditions are shown in Fig. 4. As can be seen, there was greater negativity in both the general and social negative-framing conditions than in the no-framing condition. In the no-framing condition, similar to Studies 1 and 2, we uncovered a positivity effect, with a mean forecast of 60.7%, which is significantly higher than 50%, $t(153)=12.95$, $p<0.001$. In the social-framing condition we observed a mean forecast of 55.0% which was also significantly different from 50%, $t(76)=3.79$, $p<0.001$. Yet the median forecast in this condition was 50%. Finally, in the general-framing condition the mean forecast was 43%, which is significantly below 50%, $t(58)=2.69$, $p=0.009$. Forecasts in the three conditions were significantly different, $F(2, 287)=39.52$, $p<0.01$, and Bonferroni post-hoc tests indicated that as predicted, there was a significant difference between the no-framing condition and both the general ($p<0.001$) and social ($p=0.004$) framing conditions, with corresponding Cohen's d scores of 1.32 (i.e., a very large effect) and 0.53 (medium sized effect).

The rate of those providing negative forecasts in the no-framing condition was only 1.2%, compared to 50.8% in the general-framing condition and 24.7% in the

⁹ The differences in the rate of message-sending are driven by the general-framing condition. Social framing led to the same rate of message sending as in the no-framing condition, 77%, $\chi^2(1)=0.00$, $p=1$; while general framing resulted in a somewhat reduced rate of message composition, 59%, $\chi^2(1)=10.49$, $p=.001$. Thus, comparisons of the general framing forecasts to those of the other two conditions should be cautiously evaluated.

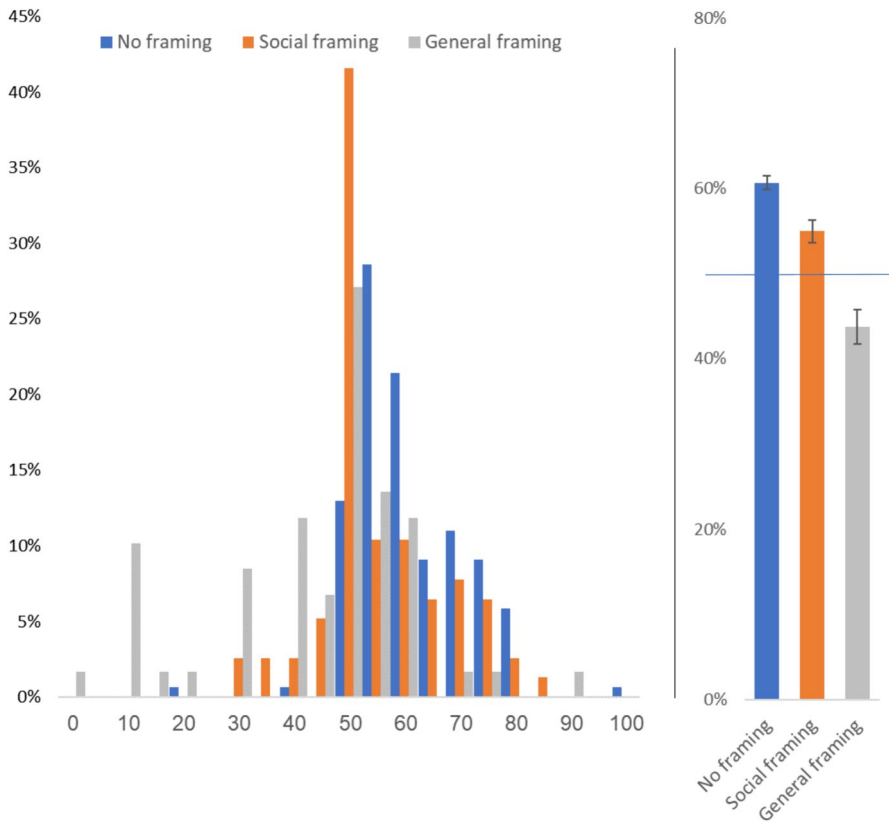


Fig. 4 Election forecasts in Study 4. Left: histograms for the no-framing condition (involving a nonconditional forecast), and for the two negative framing conditions: Social (forecast contingent on a negative vote from the recipient) and general (negatively phrased forecast). Right: averages and standard errors

social-framing condition. Yet, it is worth noting that a 24.7% rate of negative forecasts in the social-framing condition does not imply a positivity effect since about half of the participants indicated 50%. Indeed, the rates of negative and positive forecasts in this condition were equal.¹⁰ Thus, both types of negative framing led to a considerable increase in the rate of individuals reporting negative forecasts.

¹⁰ As in the previous studies, we also compared the forecasts to the actual election success of the chosen option. These were very close to 50% (No framing: 53.2%, Social framing: 50.9%, General framing: 52.6%) and all tests were replicated.

6 Study 5: The allure of negative framing

The remaining two studies focused on the ecological validity of the effect of general negative framing. In the current study we examined the effect of having both “go up to” and “go down to” options and thus being able to select either positive or negative framing. The availability of both options seems like a natural choice for a questionnaire or an advice setting (e.g., Daniller, 2023). Would some people naturally opt to use the negative framing when they have a choice? And would this increase overall pessimistic predictions compared to having no framing options? Our initial findings would suggest that since in the absence of framing people are highly optimistic about election results, they would opt for the more optimistic (positive) framing. *Hence, we predicted most participants would opt for the positively framed message.* Yet, potentially a substantial minority who select negative framing might “push” predictions towards the negative side. *We therefore additionally predicted that the selectable-framing condition, where individuals can choose the framing, would have an overall negative effect on forecasts.*

6.1 Method

6.1.1 Participants

Because in the selectable-framing condition there are two subgroups of participants (those who choose positive vs. those who choose negative framing) we doubled the sample sizes. The participants were 400 Prolific Academic workers (with the same characteristics as those in Study 1). Five did not complete the study. The remaining 395 were randomly allocated to the two study conditions of no framing, and selectable positive and negative (general) framing, with 197 participants allocated to the no-framing condition and 198 to the selectable-framing condition. Within each of the framing/no-framing conditions, participants were further randomly assigned to receive a message either from their own condition or from a different condition. Across conditions, 49.6% of the participants were female (No framing: 50.2%, Selectable framing: 49.0%). Their average age was 38.1 (SD = 12.7) years. Additional demographics of the two conditions appear in the Supplementary section. Payment was as in the previous studies.

6.1.2 Task

The control (no-framing) condition was identical to that of Study 2 and Study 4. In the selectable-framing condition participants could choose between using positive or negative framing. Specifically, the message in the no-framing condition ended with: “I believe that the voting percentage for <what the participant has chosen> will be __”, while in the selectable-framing condition participants chose between a positively framed message: (“...I believe that the voting percentage for Green/Blue will go up to __”) and a negatively framed message (“...I believe that

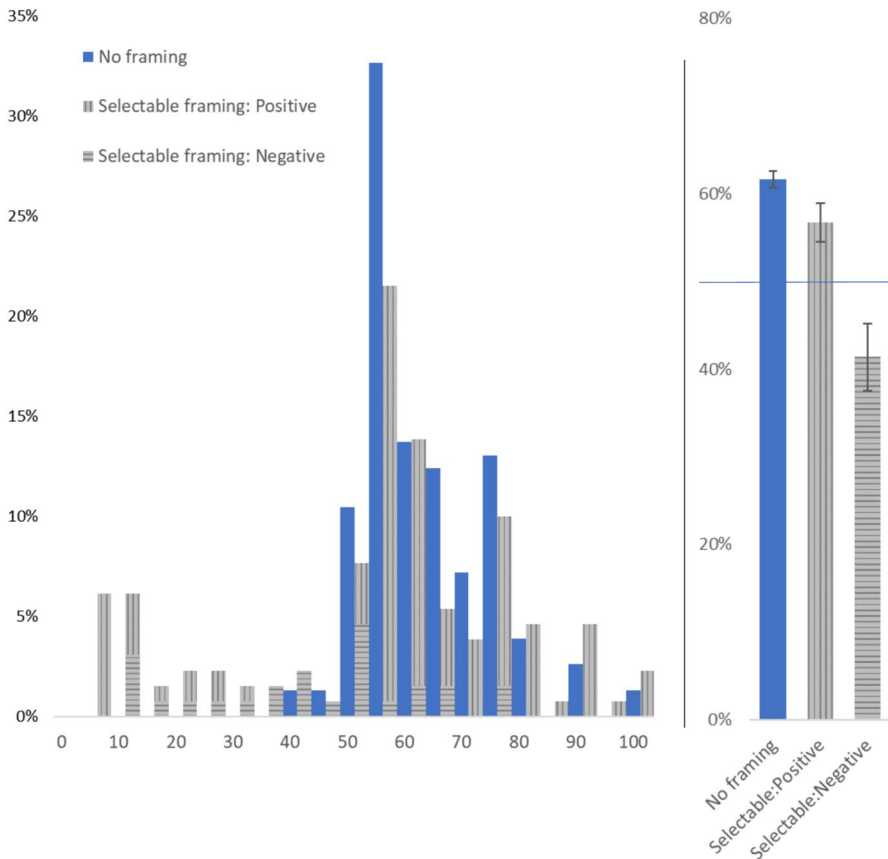


Fig. 5 Election forecasts in Study 5. Left: histograms for the no-framing condition and the selectable (positive and negative) framing condition. In the selectable framing condition, the forecast was contingent upon either a positive or a negative vote from the recipient, and these two possibilities are shown separately. Right: averages and standard errors

the voting percentage for Green/Blue will go down to __”). In both conditions participants could also avoid sending a message. The order of the message frames was randomized for each participant, while the option of not sending a message was presented below them.

6.2 Results

There was a slight preference for the blue over the green color in the initial poll (No-framing: 57%, Selectable-framing condition: 57%). The rate of those who sent a message with a forecast to other participants was high (No-framing condition: 78%, Selectable-framing condition: 72%, $\chi^2(1) = 1.84$, $p = 0.20$).

As expected, most participants who sent a message in the selectable-framing condition preferred to use positive framing (81.0%). However, a non-negligible

minority chose to use negative framing (19.0%). The distributions of forecasts in the no-framing and selectable-framing conditions are shown in Fig. 5. As can be seen, overall, there was greater negativity in the selectable-framing condition. In the no-framing condition, we replicated the positivity effect, with a mean forecast of 61.7%, which is significantly higher than 50%, $t(153)=12.69$, $p<0.001$. In the selectable-framing condition we observed a lower forecast of 53.8%, which though being above 50%, $t(76)=1.90$, $p<0.03$, constitutes a significant reduction in the positivity of the forecasts, $t(337)=3.59$, $p<0.001$, $d=0.43$, as predicted. The rate of negative (below 50%) forecasts in the no-framing condition was 2.6%, while in the selectable-framing condition it was 23.2%, constituting about a ninefold increase.

The difference between the two conditions is mostly driven by those who selected negative framing. Participants who chose negative framing had a mean forecast of 41.4%, significantly below the no-framing condition, $t(178)=5.11$, $p<0.001$, and about half of them (51.9%) of them reported a negative election prediction (below 50%). In addition, surprisingly, the forecast of those using positive framing (56.7%) was also slightly though significantly lower than in the no-framing condition, $t(266)=2.08$, $p=0.04$.

7 Study 6: Framing in a hypothetical US elections

Incentivizing participants for their voting decision provides an economic impetus for making voting decisions that increase incentives, and for persuading others to vote in a likewise manner. Such incentivization, which is considered a cornerstone in experimental economics (Davis & Holt, 1993), can be instantiated in an ethical manner in partisan communications using the minimal-information election design of Studies 1–5. Yet one of the possible limitations of these studies is that although participants were incentivized, their motivation might have been too weak to elicit strong affiliative responses. Additionally, as opposed to the elections of candidates for office where voters presumably base their predictions on personal experience (Meyvis et al., 2010), participants in our experiments had no personal experience to rely on besides the statistics that they were given, which arguably might have increased the volatility of their forecasts (even though their actual votes were highly consistent with their incentives).¹¹ Accordingly, we replaced the voting game with a single hypothetical decision involving a real election outcome between previous U.S. election candidates who were viable candidates for presidency at the time of the Study, 15 months before the 2024 U.S. elections. In this setting, we replicated Study 5 comparing a condition with selectable positive and negative framing messages, and a condition with no framing. *We predicted that as in the minimal-information setting, we would get overall positive forecasts with no framing and more negative forecasts with negative framing.*

¹¹ Additionally, familiarity with the favorite candidates might facilitate more optimistic forecasts (c.f., Bar-Hillel et al., 2008; Bar-Hillel, & Budescu, 1995).

7.1 Method

7.1.1 Participants

The participants were 400 Prolific Academic workers (with the same characteristics as those in Study 1). Four did not complete the study. The remaining 396 were randomly allocated to the two study conditions of no-framing and selectable positive and negative (general) framing: 200 were allocated to the no-framing condition and 196 to the selectable-framing condition. Across conditions, 48.2% of the participants were female (No framing: 50.0%, Selectable framing: 46.4%). Participants' average age was 36.5 (SD = 12.1) years. Additional demographics of the two conditions appear in the Supplementary section. Participants received a fixed payment of \$1.7 for their participation.

7.1.2 Task

In this study, there was only one session. After completing an informed consent form, participants chose between two political figures: Joe Biden and Donald Trump, after being shown images of the two (see [Appendix](#) section). Specifically, they were asked to select the president that seemed “better” in their opinion. Next, they were presented with the following scenario: “Imagine that these two candidates were the ones running for the next U.S. elections, and that you could send a message to 1–5 other voters who made the same selection as you in the previous page. What is the message that you would send them, to be received on the morning of the day of the elections?”.

In the no-framing condition participants chose whether (or not) to send a message including the phrase: “I know that you selected Donald Trump/ Joe Biden in a survey, and you probably support him. I believe that Donald Trump/ Joe Biden will get ____% of the participants votes. Please select Donald Trump/ Joe Biden! (The candidate's name was set based on the participants' choice).

In the selectable-framing condition participants selected between two versions of the message as in Study 5. The positive framing message indicated: “I believe that the voting percentage for Donald Trump/ Joe Biden will go up to ____%” and the negative framing message indicated: “I believe that the voting percentage for Donald Trump/ Joe Biden will go down to ____%.” Next, participants completed demographic questions as in the previous studies and were paid and dismissed.

7.2 Results

There was a large preference for Joe Biden over Donald Trump as the better president (No framing: 74.0%, Selectable framing: 73.5%). The rate of those who sent a message to other participants was 48.5% in the no-framing condition and 36.7% in the selectable-framing condition, a significant difference, $\chi^2(1) = 5.60$, $p = 0.02$,

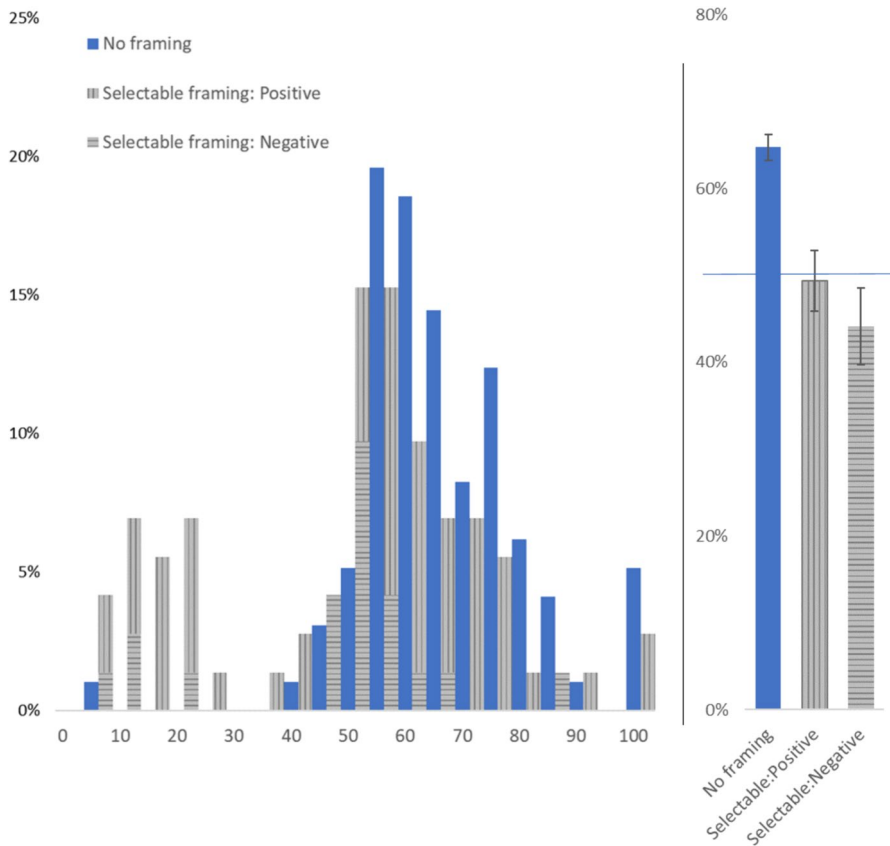


Fig. 6 Election forecasts in Study 6 of a hypothetical U.S. election. Left: histograms for the no-framing condition and the selectable (positive and negative) framing condition. In the selectable framing condition, the forecast was contingent upon either a positive or a negative vote from the recipient, and these two possibilities are shown separately. Right: averages and standard errors

which implies that the selectable-framing condition had a negative effect on the likelihood of communicating with one's peers.

As in Study 5, most participants who sent a message in the selectable-framing condition, chose to use positive framing (72.2%). However, again a non-negligible minority preferred negative framing (27.8%). The distributions of forecasts in the two conditions are shown in Fig. 6. As can be seen, overall, there was greater negativity in the selectable-framing condition. In the no-framing condition, we replicated the positivity effect observed in the election game, with a mean forecast of 64.7%, which was significantly higher than 50% as predicted, $t(96)=9.75$, $p<0.001$. In the selectable-framing condition we observed a significantly lower mean forecast of 47.9%, $t(167)=5.28$, $p<0.001$, $d=0.88$, as predicted; though it was not significantly different from 50%, $t(71)=0.74$, $p=0.46$. The rate of

negative forecasts (below 50%) in the no-framing condition was 7.2%, while in the selectable-framing condition it was 40.2%, more than a fivefold increase.

Those using negative framing in the selectable-framing condition had a mean forecast of 44.1%, significantly lower than in the no-framing condition, $t(115)=5.31$, $p<0.001$. Surprisingly, again those using positive framing had a mean forecast of 49.4%, which was also significantly lower than in the no-framing condition, $t(147)=4.04$, $p<0.001$. We address possible explanations of the latter phenomenon in the discussion section. Finally, it should be noted that the main effect of framing did not interact with a preference for Joe Biden or Donald Trump. The greater negativity observed when participants could select their framing option was found in both sides of the political camp (see Supplementary section).

8 General discussion

As noted at the outset there is little prior research on voters' communicated forecasts, which is an important gap both from a theoretical perspective as well as in light of the rising importance of alternative communication channels to election outcomes (e.g., Gueorguieva, 2008; Starke et al., 2020). For example, it was found that social networking communications mediated the likability of politicians (Starke et al., 2020) and can predict election outcomes (DiGrazia et al., 2013; Kruikemeier, 2014; Singh et al., 2019).

Our findings based on an online sample showed that in the absence of a framing intervention, election forecasts made in the course of partisan communications during minimal-information elections and in a hypothetical U.S. election tend to exhibit a positive forecasting error. Namely, as found in Study 1a–c and the control conditions of Studies 2, 4, and 6, on average individuals communicated the prediction that the majority would vote for their own preferred candidate.¹² This could be due to a bias (e.g., social projection) or rational considerations (recipients' presumed sensitivity to base rate).

However, negatively framing the forecasting prompt had dramatic effects on this pattern. When the communication was framed as the reduced voting rates if a single addressee will not vote in favor, most communicators gave negative forecasts (in Studies 2 and 3). In Study 4 we further dissected the contents of the framing and found that general negative framing ("will go down to") was sufficient to trigger a negative election forecast, even without a socially negative ("if you don't") aspect. As indicated above, this phrasing may engage individuals' attention in a negative eventuality (see e.g., Levin et al., 1998; Teodorescu & Erev, 2013), and in addition, it may follow a conversational norm whereby if one indicates a reduction in desired outcomes, then one refers not to the mean expected outcome but to the minimal or below-standard expected

¹² The results of identical study conditions with no framing and baseline information were quite similar in different experiments, with a mean forecast of 60.9% in Study 1c, 62.0% in Study 2, 60.7% in Study 4, and 61.7% in Study 5.

outcome. The effect size of this framing manipulation was very large, with a 50% absolute increase in the number of those reporting negative forecasts.

In addition, negative social framing was sufficient to completely eliminate the positivity effect, even without the general negative contingency (namely, “if you don’t” without “the voting rates will go down to”). The “if you don’t” framing led to equal rates of negative and positive predictions (below or above 50%) in Study 4.

The negative-framing manipulation was not sensitive to base rate information, particularly the fact that a previous election was a close one. This seems to suggest that the effect of framing on forecasting is rather implicit and automatic, as it is not deliberate enough to be influenced by information concerning base rate. Another factor that did not affect election forecasts is the actual success rate: participants who chose the election-targets that were slightly preferred or under-preferred made virtually the same forecasts (as analyzed in Study 1a–c, and this was the same in all studies).

Finally, when participants could send either a positively or a negatively framed message (in Studies 5 and 6), even though most of them preferred positive framing, there was a small but non-negligible minority who chose to use negative framing (19% in study 5 using an election game and 28% in Study 6 involving hypothetical U.S. elections). Those who selected negative framing also had negative election predictions on average, which reduced the overall average predictions in the selectable-framing condition. Surprisingly, in both studies we found that those selecting positive framing also had somewhat less positive election predictions than in a no-framing condition. This could be because of several reasons. One is the sheer exposure to the negative framing version (see related effects in Baumeister et al., 2001). Another, though, is a more strategic mindset driven by the positive framing option, namely “will go up to” might have been interpreted as “will only go up to” leading some individuals to make pessimistic predictions.

To sum, we find that in a minimal-information election people making partisan communications display over-optimism in election forecasts. Thus, people do not appear to be spontaneous “doomsayers” seeking to exploit such biases as loss aversion and the attentional response to losses (loss attention) so as to instill fear in others sharing the same political view. However, the apparent positivity in voting-related communication is highly volatile and influenceable, and in an appropriate negative framing context Gevald communications emerge for the majority of forecasters. These findings are consistent with recent studies of negative framing showing that it can affect economic predictions in settings ranging from prices (Sonnemann et al., 2013) to the expected success of policies (Dylong & Koenings, 2023). Future studies should examine whether the easy triggering of positivity and negativity in election forecasts based on subtle phrasing changes may account for some of the variance in naturally occurring communications, including those of politicians.

Appendix: Experimental instructions for all studies

Phase 1 (screen 1): General instructions

These instructions were shown after participants filled in the online consent form.

Study 1a, 1c, 2, 3, 4, 5:

Dear participant,

In the next screen, you need to choose between two options. You will make this decision in this current session and in the next session three days from now.

You are free to choose the option that seems better in your opinion.

Importantly, in order to get the additional \$1 in this experiment, next time you make this decision (three days from now) *you will need to choose the option that most of the participants in this experiment choose* (in their second selection, three days from now). Keep in mind that we are recruiting 100 Prolificers (Study 4, 5: 400 Prolificers) to participate in this study (Note: the term study here pertains to the group in which the election is performed).

Study 1b:

Dear participant,

In the next screen, you need to choose between two options.

This choice will be repeated again in the next session three days from now, but then **only the option you selected in this session** will be available to you. Namely, the other options will not be available (though you'll be able to abstain).

You are free to choose the option that seems better in your opinion.

Importantly, in order to get the additional \$1 in this experiment, next time you make this decision (three days from now) *you will need to choose the option that most of the participants in this experiment choose* (in their second selection, three days from now). Keep in mind that we are recruiting 100 Prolificers to participate in this study (Note: the term study here pertains to the group in which the election is performed).

Study 6:

Dear participant,

In the next screen, you need to choose between two optional presidents.

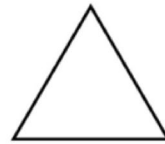
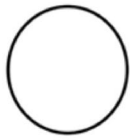
You are free to choose the president that seems better in your opinion.

Phase 1 (Screen 2): Selection

Studies 1–5:

Please select one of the options:

For now, this does not lead to gaining money. BUT next time you select one of these two options, three days from now, if you choose the option that most of the participants in this experiment choose (three days from now), you will get an additional \$1.



Or:



Study 6:

Please select one of the options¹³.



Phase 1 (Screen 3): Message instructions:

Study 1a, 1c 2, 3:

Before ending this part of the experiment, we would like to give you a chance to send a message that *1–5 other participants who made the same selection as you* in this round will get to read just before making their selection three days from now.

¹³ Images taken from the official Whitehouse website: <https://www.whitehouse.gov/about-the-white-house/presidents/>.

Study 1b: Before ending this part of the experiment, we would like to give you a chance to send a message that *1–5 other participants who made the same selection as you* in this round will get to read a day before making their selection two days from now. Importantly, *these are participants who if they arrive to the session, will need to make the exact same selection as you* (or abstain). The message serves as a reminder for them to attend the second session.

Study 4, 5: Before ending this part of the experiment, we would like to give you a chance to send a message that *1–5 other participants who made the same selection as you* in this round will get to read a day before making their selection two days from now. The message serves as a reminder for them to attend the second session.

Additional information, Study 1c, 2, 3 (Information condition), 4, 5: When writing your message keep in mind that in the last few weeks, we ran a pilot study regarding these two selecting options with 100 participants. The results suggest that **both of the options received about 50% of the votes** (the results were not significantly different from 50%).

Study 6: Imagine that these two candidates were the ones running for the next US elections, and that you could send a message to 1–5 other voters who made the same selection as you in the previous page. What is the message that you would send them, to be received on the morning of the day of the elections?

Studies 1–6: Here is the message (please fill in the blanks).

Study 1a–c: I believe the Green Color/Blue Color/Triangle/Circle¹⁴ will get ____% of the participants votes. please select Green Color/Blue Color/Triangle/Circle!

Study 2, 3, 4:

I, user xxxx*, voted for the Green/Blue Color. I know that you voted for the Green/Blue Color as well, and you support that color.

Study 2 No-framing condition, Study 4 No-framing condition, Study 5 No-framing condition:

I believe the Green/Blue Color will get ____% of the participants votes. Please select Green Color!

Study 2 Framing condition, Study 3:

If you will not help us and vote for the Green/Blue Color, I believe that the voting percentage for Green/Blue will go down to ____%. Please select Green/Blue Color!

Study 4 Social (negative) framing condition:

If you will not help us and vote for the Green/Blue Color, I believe that the voting percentage for Green will be ____%. Please select Green/Blue Color!

Study 4 General (negative) framing condition:

¹⁴ Only the selection made by the participant in the poll was indicated here and in all other cases where options are shown with a dash.

I believe that the voting percentage for Green/Blue will go down to ____%.
Please select Green/Blue Color!

Study 5 Selectable-framing condition:

- I, user xxxx*, voted for the Green/Blue Color. I know that you voted for e Green/Blue Color as well, and you support that color. I believe that the voting percentage for Green/Blue will go down to ____%. Please select Green/Blue Color!
- I, user xxxx*, voted for the Green/Blue Color. I know that you voted for the Green/Blue Color as well, and you support that color. I believe that the voting percentage for Green/Blue will go up to ____%. Please select Green/Blue Color!¹⁵

Study 6 No-framing condition

- I, user xxxx*, voted for Joe Biden/Donald Trump. I know that you selected Joe Biden/Donald Trump in a survey, and you probably support him. I believe the Joe Biden/Donald Trump will get ____% of the participants votes. Please select Joe Biden/Donald Trump!

Study 6 Selectable-framing condition:

- I, user xxxx*, voted for Joe Biden/Donald Trump. I know that you selected Joe Biden/Donald Trump in a survey, and you probably support him. I believe that the voting percentage for Joe Biden/Donald Trump will go down to ____%. Please select Joe Biden/Donald Trump!
- I, user xxxx*, voted for Joe Biden/Donald Trump. I know that you selected Joe Biden/Donald Trump in a survey, and you probably support him. I believe that the voting percentage for Joe Biden/Donald Trump will go up to ____%. Please select Joe Biden/Donald Trump!

Studies 1–6:

- I choose not to send a message.

Message sent 1 day before phase 2

Study 1b, Study 4:

Before making your selection tomorrow, the following message was compiled by a participant that had the same selection as you in the previous vote two days ago:
<Message content>

¹⁵ The order of these two items was randomized for each participant, here and in Study 6 Selectable-framing condition.

Phase 2 (screen 1): General instructions

Studies 1–5:

In this session, you need to again select between two options.

In order to get the additional \$1 in this experiment, you will need to choose the option that most of the participants choose in this session.

Phase 2 (screen 2): Message from another participant:

Study 1a, 1c, 2, 3, 5:

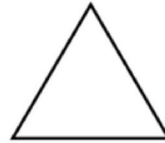
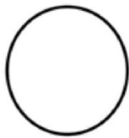
Before making your choice, the following message was compiled by a participant that had the same selection as you in the previous vote three days ago: <Message content>

Phase 2 (screen 3): Selection

Study 1a, 1c, 2, 3, 4, 5:

Please select one of the options:

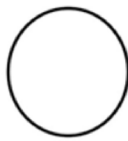
If you choose the option that most of the participants in this session (today) select you will get an additional \$1.



Or:



Study 1b:



- ☐ I would like to abstain from voting

Or:



- ☐ I would like to abstain from voting

Or:



- ☐ I would like to abstain from voting

Or:



- ☐ I would like to abstain from voting

Note: In Study 1b the presented object was based on the participant's poll choice. A single presented object was shown for each participant, along with the abstaining option.

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References

- Bar-Hillel, M., & Budescu, D. V. (1995). The elusive wishful thinking effect. *Thinking and Reasoning*, 1, 71–104.
- Bar-Hillel, M., Budescu, D. V., & Amar, M. (2008). Predicting World Cup results: Do goals seem more likely when they pay off? *Psychonomic Bulletin and Review*, 15, 278–283.
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, 5, 323–370.
- Bender, A., Kuzin, Y., & Shimoni, M. (2019). *Less than an hour to vote closing: Netanyahu, Gantz and Gabai are in pressure*. Shas reading Palms. *Maariv*. <https://www.maariv.co.il/elections2019/Article-693546>
- Benistant, J., Galeotti, F., & Villeval, M. C. (2021). *The Distinct impact of information and incentives on cheating*. Unpublished manuscript. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3766196
- Blaauwkamp, J. M., Rowling, C. M., & Pettit, W. (2018). Are Americans really okay with torture? The effects of message framing on public opinion. *Media, War & Conflict*, 11, 446–475.
- Bølstad, J., & Dinas, E. (2017). A categorization theory of spatial voting: How the center divides the political space. *British Journal of Political Science*, 47, 829–850.
- Bornstein, G., & Rapoport, A. (1988). Intergroup competition for the provision of step-level public goods: Effects of preplay communication. *European Journal of Social Psychology*, 18, 125–142.
- Bornstein, G., Rapoport, A., Kerpel, L., & Katz, T. (1989). Within- and between-group communication in intergroup competition for public goods. *Journal of Experimental Social Psychology*, 25, 422–436.
- Campbell, J. D., & Tesser, A. (1986). Self-evaluation maintenance processes in relationships. In S. Duck & D. Perlman (Eds.), *Understanding personal relationships: An interdisciplinary approach* (pp. 107–135). Sage.
- Chia, S. C., & Chang, T.-K. (2015). Not my horse: Voter preferences, media sources, and hostile poll reports in election campaigns. *International Journal of Public Opinion Research*, 29, 23–45.
- Cialdini, R. B. (1993). *Influence: Science and practice* (3rd ed.). Harper Collins.
- Cialdini, R. B., Wosinska, W., Barrett, D. W., Butner, J., & Gornik-Durose, M. (1999). Compliance with a request in two cultures: The differential influence of social proof and commitment/consistency on collectivists and individualists. *Personality and Social Psychology Bulletin*, 25, 1242–1253.
- Davis, D. D., & Holt, C. A. (1993). *Experimental economics*. Princeton University Press.
- Desai, S., Xie, B., & Hayes, B. K. (2022). Getting to the source of the illusion of consensus. *Cognition*, 223, 105023.
- DiGrazia, J., McKelvey, K., Bollen, J., & Rojas, F. (2013). More tweets, more votes: Social media as a quantitative indicator of political behavior. *PLoS ONE*, 8, e79449.
- Dylong, P., & Koenings, F. (2023). Framing of economic news and policy support during a pandemic: Evidence from a survey experiment. *European Journal of Political Economy*, 76, 102249.
- Epley, N., & Gilovich, T. (2006). The anchoring-and-adjustment heuristic: Why the adjustments are insufficient. *Psychological Science*, 17, 311–318.
- Eroglu, C., & Croxton, K. L. (2010). Biases in judgmental adjustments of statistical forecasts: The role of individual differences. *International Journal of Forecasting*, 26, 116–133.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Row, Peterson.
- Fleitas, D. (1971). Bandwagon and underdog effects in minimal-information elections. *American Political Science Review*, 65, 434–438.
- Fleming, J. H., & Darley, J. M. (1989). Perceiving choice and constraint: The effects of contextual and behavioural cues on attitude attribution. *Journal of Personality and Social Psychology*, 56, 27–40.
- Gal, D., & Rucker, D. (2018). The loss of loss aversion: Will it loom larger than its gain? *Journal of Consumer Psychology*, 28, 497–516.

- Goethals, G. R., & Darley, J. M. (1977). Social comparison theory: An attributional approach. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 259–278). Hemisphere/ Halsted.
- Gueorguieva, V. (2008). Voters, MySpace, and YouTube: The impact of alternative communication channels on the 2006 election cycle and beyond. *Social Science Computer Review*, 26, 288–300.
- Hollander, B. A. (2014). The surprised loser: The role of electoral expectations and news media exposure in satisfaction with democracy. *Journalism & Mass Communication Quarterly*, 91, 651–668.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263–291.
- Kiss, A., & Simonovits, G. (2014). Identifying the bandwagon effect in two-round elections. *Public Choice*, 160, 327–344.
- Krueger, J., & Clement, R. W. (1994). The truly false consensus effect: An ineradicable and egocentric bias in social perception. *Journal of Personality and Social Psychology*, 67, 596–610.
- Krueger, J. I. (2013). Social projection as a source of cooperation. *Current Directions in Psychological Science*, 22, 289–294.
- Kruikemeier, S. (2014). How political candidates use Twitter and the impact on votes. *Computers in Human Behavior*, 34, 131–139.
- Kuru, O., Pasek, J., & Traugott, M. W. (2017). Motivated reasoning in the perceived credibility of public opinion polls. *Public Opinion Quarterly*, 81, 422–446.
- Lakoff, G. (2010). The poll democrats need to know about: Framing, value-shifting, the California budget crisis, and why democrats so often act like republicans. *The California Journal of Politics & Policy*, 2, 1–10.
- Lammers, J., Bukowski, M., Potoczek, A., Fleischmann, A., & Hofmann, W. (2022). Disentangling the factors behind shifting voting intentions: The bandwagon effect reflects heuristic processing, while the underdog effect reflects fairness concerns. *Journal of Social and Political Psychology*, 10, 676–692.
- Lang, K., & Lang, G. E. (1984). The impact of polls on public opinion. *The Annals of the American Academy of Political and Social Science*, 472, 129–142.
- Le Maux, B., & Necker, S. (2023). Honesty nudges: Effect varies with content but not with timing. *Journal of Economic Behavior & Organization*, 207, 433–456.
- Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes*, 76, 149–188.
- Lipkus, I. M., Samsa, G., & Rimer, B. K. (2001). General performance on a numeracy scale among highly educated samples. *Medical Decision Making*, 21, 37–44.
- Madson, G. J., & Hillygus, D. S. (2022). All the best polls agree with me: Bias in evaluations of political polling. *Political Behavior*, 42, 1055–1072.
- Marks, G., & Miller, N. (1987). Ten years of research on the false-consensus effect: An empirical and theoretical review. *Psychological Bulletin*, 102, 72–90.
- Mata, A., & Simao, C. (2020). Karmic forecasts: The role of justice in forecasts about self and others. *Motivation Science*, 6, 335–345.
- Meor, A. (2008). *What we learned from Arthur Finkelstein*. Zarlev.
- Meyvis, T., Ratner, R. K., & Levav, J. (2010). Why don't we learn to accurately forecast feelings? How misremembering our predictions blinds us to past forecasting errors. *Journal of Experimental Psychology: General*, 139, 579–589.
- Miller, J. (1984). Culture and the development of everyday social explanation. *Journal of Personality and Social Psychology*, 46, 961–978.
- Morton, R. B., Muller, D., Page, L., & Torgler, B. (2015). Exit polls, turnout, and bandwagon voting: Evidence from a natural experiment. *European Economic Review*, 77, 65–81.
- Mullen, B., Atkins, J. L., Champion, B. S., Edwards, C., Hardy, D., Story, J. E., & Vanderklok, M. (1985). The false consensus effect: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology*, 21, 262–283.
- Muñoz-García, A., Gil-Gómez de Liaño, B., & Pascual-Ezama, D. (2021). Gender differences in individual dishonesty profiles. *Frontiers in Psychology*, 12, 728115.
- Nabi, R., Walter, N., Oshidary, N., Endacott, C., Love-Nichols, J., Lew, Z., & Aune, A. (2020). Can emotions capture the elusive gain-loss framing effect? A meta-analysis. *Communication Research*, 47, 1107–1130.
- Palfrey, T. R., & Rosenthal, H. (1983). A strategic calculus of voting. *Public Choice*, 41, 7–53.

- Pennycook, G., McPheters, J., & Rand, B. (2022). Beliefs about COVID-19 in Canada, the United Kingdom, and the United States: A novel test of political polarization and motivated reasoning. *Personality and Social Psychology Bulletin*, 48, 750–765.
- Pierce, J. R., Kilduff, G. J., Galinsky, A. D., & Sivanathan, N. (2013). From glue to gasoline: How competition turns perspective takers unethical. *Psychological Science*, 24, 1986–1994.
- Rapoport, A., & Bornstein, G. (1987). Intergroup competition for the provision of binary public goods. *Psychological Review*, 94, 291–299.
- Rapoport, A., Bornstein, G., & Erev, I. (1989). Intergroup competition for public goods: Effects of unequal resources and relative group size. *Journal of Personality and Social Psychology*, 56, 748–756.
- Robbins, J. M., & Krueger, J. I. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and Social Psychology Review*, 9, 32–47.
- Ross, L., Greene, D., & House, P. (1977). The 'false consensus effect': An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology*, 13, 279–301.
- Schild, C., Lilleholt, L., & Zettler, I. (2019). Behavior in cheating paradigms is linked to overall approval rates of crowdworkers. *Journal of Behavioral Decision Making*, 34, 157–166.
- Schumacher, G., & Öhberg, P. (2020). How do politicians respond to opinion polls? An experiment with Swedish politicians. *Research and Politics*, 7, 1–6.
- Schurr, A., & Ritov, I. (2016). Winning a competition predicts dishonest behavior. *Proceedings of the National Academy of Sciences*, 113, 1754–1759.
- Searles, K., Ginn, M. H., & Nickens, J. (2016). For whom the poll airs: Comparing poll results to television poll coverage. *Public Opinion Quarterly*, 80, 943–963.
- Searles, K., Smith, G., & Sui, M. (2018). Partisan media, electoral predictions, and wishful thinking. *Public Opinion Quarterly*, 82, 888–910.
- Singh, P., Kumar, K., Kahlon, K. S., & Sawhney, R. S. (2019). Can Tweets predict election results? Insights from Twitter analytics. In A. Luhach, D. Jat, K. Hawari, X. Z. Gao, & P. Lingras (Eds.), *Advanced informatics for computing research (ICAICR 2019). Communications in computer and information science* (vol. 1075). Springer.
- Smith, G., & Searles, K. (2014). Who let the (attack) dogs out? New evidence for partisan media effects. *Public Opinion Quarterly*, 78, 71–99.
- Sonnemann, U., Camerer, C. F., Fox, C. R., & Langer, T. (2013). How psychological framing affects economic market prices in the lab and field. *Proceedings of the National Academy of Sciences*, 110, 11779–11784.
- Starke, C., Marcinkowski, F., & Wintterlin, F. (2020). Social networking sites, personalization, and trust in government: Empirical evidence for a mediation model. *Social Media + Society*, 6, 1–11.
- Taylor, S. E. (1991). The asymmetrical impact of positive and negative events: The mobilization-minimization hypothesis. *Psychological Bulletin*, 110, 67–85.
- Teodorescu, K., & Erev, I. (2014). On the decision to explore new alternatives: The coexistence of under- and over-exploration. *Journal of Behavioral Decision Making*, 27, 109–123.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124–1130.
- Vandello, J. A., Goldschmied, N. P., & Richards, D. A. (2007). The appeal of the underdog. *Personality and Social Psychology Bulletin*, 33, 1603–1616.
- Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, 806–820.
- Yechiam, E. (2019). Acceptable losses: The debatable origins of loss aversion. *Psychological Research Psychologische Forschung*, 83, 1327–1339.
- Yechiam, E., & Hochman, G. (2013). Losses as modulators of attention: Review and analysis of the unique effects of losses over gains. *Psychological Bulletin*, 139, 497–518.

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