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HINDSIGHT BIAS AND ELECTORAL OUTCOMES: SATISFACTION COUNTS MORE THAN WINNER-LOSER STATUS

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The tendency to perceive outcomes as more foreseeable once they are available is a well-known phenomenon. However, research on the cognitive and motivational factors that induce individuals to overestimate the foreseeability of an electoral outcome has yielded inconsistent findings. In three studies based on large-scale electoral surveys (ITANES, Italian National Election Studies), we argued that the tendency to perceive an electoral outcome as foreseeable is positively and consistently associated with satisfaction with the outcome. Across all studies, satisfaction with the outcome was significantly and positively associated with retrospective foreseeability, above and beyond voters' preference for a "winning" or "losing" party. In Study 3, a measure of memory distortion of pre-electoral forecasts was included, which was only weakly associated with retrospective foreseeability, but not with satisfaction for the outcome, supporting the notion of different levels of hindsight bias associated with different cognitive and motivational factors.

Keywords: hindsight bias, retrospective foreseeability, memory distortion, satisfaction, general elections

How often, after an election, have we commented on the outcome saying: "I knew it all along," or "I saw it coming"? If we have done so, we are likely to have incurred the *hindsight bias*, that is, the tendency to overestimate the foreseeability of an outcome after it has occurred (Fischhoff, 1975). The presence of a hindsight bias in the retrospective evaluation of an electoral outcome has been observed by a number of studies (Blank, Fischer, & Erdfelder, 2003; Calvillo & Rutchick, 2014;

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Lamberty, Hellman, & Oeberst, 2018; Leary, 1982; Powell, 1988; Tykocinski, 2001), but research on the cognitive and motivational factors that induce individuals to overestimate the foreseeability of an election outcome has yielded inconsistent findings so far. This might be the case for three main reasons.

First, past studies indicate that the hindsight bias is a multi-level construct (Blank, Nestler, von Collani, & Fischer, 2008), with different cognitive, motivational, and social factors affecting different levels of the bias (see Roese & Vohs, 2012). Second, past studies have considered the number of votes received by a candidate, party or coalition, and the related "winner" or "loser" status as the key factor affecting voters' retrospective foreseeability judgments. In the context of election results, however, the definition of "winner" or "loser" is often debated, and therefore a clear-cut distinction between victory and defeat is not always applicable. Third, past experiences, a priori likelihood estimates, and expectations can induce voters to frame the same result in very different ways, resulting in different levels of satisfaction, surprise, relief, or disappointment.

In three studies, we aimed to overcome the inconsistencies of previous research results, moving from the assumption that voters' *subjective assessment* of the electoral outcome, rather than the *objective* electoral outcome, would play a relevant role in voters' hindsight bias, with regard to its retrospective foreseeability level. As a measure of subjective assessment, we used *satisfaction* with the electoral outcome. We expected satisfaction to be consistently and positively associated with the tendency to overestimate retrospective foreseeability, above and beyond the objective electoral outcome. Such a result would be consistent with a motivational explanation of retrospective foreseeability (Pezzo & Pezzo, 2007; Roese & Vohs, 2012). We also expected that satisfaction would not be equally associated with another, more basic level of the hindsight bias, that is, memory distortion, thus supporting the differentiation among different levels of the hindsight bias, and the notion of different factors influencing each level (Blank, Nestler, von Collani, & Fischer, 2008).

To test our hypotheses, we employed data from three electoral surveys carried out by the ITANES[1] group upon general elections in Italy and involving representative samples of voters. Despite the different political scenarios in which these elections took place, we expected to find a consistent link between satisfaction and retrospective foreseeability across all three studies.

THE THREE LEVELS OF THE HINDSIGHT BIAS

The hindsight bias has been observed by several studies, carried out in various domains and with different experimental designs (see Bernstein, Aßfalg, Kumar, & Ackerman, 2016; Guilbault, Bryant, Brockway, & Posavac, 2004; and Pohl, 2007, for reviews). Previous research has also suggested that the hindsight bias affects individuals' judgments at three different levels: memory distortion, inevitability impression, and retrospective foreseeability (Blank et al., 2008; Nestler, Blank, &

1. The ITANES group has been analyzing voting behavior in Italy since the beginning of the 1990s. Readers interested in more details regarding the ITANES research program can visit the website www.itanes.org.

Egloff, 2010; Roese & Vohs, 2012). In the present research, we investigated two of these levels, namely, retrospective foreseeability (Study 1, 2, and 3) and memory distortion (Study 3).

The memory distortion level of the hindsight bias is the result of a failure to recollect one's past judgments. People asked to retrospectively evaluate the predictability of an event may not properly remember what they thought before the event took place (Hell, Gigerenzer, Gauggel, Mall, & Müller, 1988), due to the original evaluation being over-written by subsequent information (Schacter, Chiao, & Mitchell, 2003), or to the inability to handle separate representations of the same event (Arkes, 1991; Blank & Nestler, 2007; Calvillo, 2012; Mussweiler, 2003; Pohl, Eisenhauer, & Hardt, 2003). Previous research has shown that this level of the hindsight bias is influenced by individual characteristics of participants, such as older age (Coolin, Bernstein, Thornton, & Thornton, 2014; Pohl, Bayen, Arnold, Auer, & Martin, 2018).

The inevitability impression level of the hindsight bias pertains to how individuals construct causal explanations. Whereas memory distortion is generally seen as a by-product of our limited cognitive resources, past research has shown that inevitability impression often arises from specific reasoning processes, especially causal attribution (Nestler, Blank, & von Collani, 2008). People asked to retrospectively provide an explanation for the outcome of an event tend to prefer simple, one-to-one causal links over more complex one-to-many or many-to-many causal links. Being aware of the outcome of an event, they tend to select a single cause and focus on it, leaving other potential outcomes and their potential causes in the background (Roese & Olson, 1996).

The third level of the hindsight bias is retrospective foreseeability. It is the degree to which individuals evaluate the outcome of an event as something they could have predicted before the event took place (see Bernstein, Aßfalg, Kumar, Ackerman, 2016; Guilbault et al., 2004; Pohl, 2007, for reviews). Whereas memory distortion and inevitability impression are mainly related with cognitive processes, retrospective foreseeability is more likely to be affected by motivational and social factors (Louie, Curren, & Harich, 2000; Musch, 2003, Pezzo, 2011; Roese & Vohs, 2012). When individuals retrospectively evaluate the foreseeability of an event, they may be driven by the desire to present a positive image of themselves, thus overstating their ability to predict the outcome of the event (Mark & Mellor, 1991; Sedikides & Gregg, 2008). In addition to self-presentation concerns, deeper individual epistemic motivations have been found to increase the retrospective foreseeability of past events, such as the desire to perceive the world as ordered and controllable (Markman & Tetlock, 2000; Tetlock, 2005; Thompson, Armstrong, & Thomas, 1998) and the desire to reduce ambiguity by reaching a sense of cognitive closure (Kruglanski, 1989; Kruglanski & Webster, 1996).

In the present research, we focused on the motivational basis of retrospective foreseeability, speculating that satisfaction with the outcome would be constantly and significantly associated with a tendency to perceive such outcome as more foreseeable, whereas this may not be the case for other levels of hindsight bias, in particular memory distortion.

RETROSPECTIVE FORESEEABILITY AND SATISFACTION

Past research has shown that positive mood and positive affective signals influence individuals' judgments under certain conditions (Greifeneder, Bless, & Pham, 2011). Different processes account for this effect. Individuals can directly incorporate the information inferred from their affective state into their judgement of a target person or event (Schwartz & Clore, 1988). They can also incorporate unrelated concepts and information that are consistent with their affective state (Forgas, 1995). Further, they can be indirectly influenced by the ease of retrieval of different pieces of information stored in memory (Greifeneder & Bless, 2007). Taken together, these processes promote affect-consistent, coherent, and quick judgments, but not always accurate ones (Bower & Forgas, 2000; Park & Banaji, 2000). Past research has also shown that the more individuals are satisfied with an outcome, the more they are motivated to consider it reliable and stable, rather than mutable and dependent on chance (Forgas, 1995). Finally, some research evidence suggests that the consistency of an outcome with existing attitudes, hopes, and expectations affects retrospective judgments, with individuals being more inclined to exaggerate the foreseeability of an event when they deem it positive and, conversely, to understate it when they deem it negative (reverse hindsight bias; Arkes, Faust, & Guilmette, 1988; Louie, 1999; Mark & Mellor, 1991; Pezzo & Beckstead, 2008). The latter result has been explained in terms of defensive processing: Once an undesired outcome has occurred, individuals try to distance themselves from it, deeming it unpredictable and thus implicitly denying any responsibility for it.

Based on the above, in our three studies we assessed the relationship between the retrospective foreseeability of the outcome of national elections and satisfaction with the outcome. We expected that higher satisfaction with the electoral outcome would be associated with higher retrospective foreseeability.

RETROSPECTIVE FORESEEABILITY AS A FUNCTION OF WINNER-LOSER STATUS

So far, research on electoral hindsight bias has been conducted in the context of presidential (Calvillo & Rutchick, 2014; Lamberty et al., 2018; Leary, 1982; Powell, 1988) and gubernatorial (Synodinos, 1986) elections in the United States, the election of the prime minister in Israel (Tykocinski, 2001), and parliamentary elections in Great Britain (Pennington, 1981) and Germany (Blank et al., 2003; Blank et al., 2008). Results consistently showed that the recall of pre-electoral predictions was distorted once the outcome was known, and this was especially the case for voters with a low level of political knowledge (Calvillo & Rutchick, 2014).

Only a small number of studies have investigated whether the positive or negative valence attributed to the electoral outcome affects voters' hindsight bias. The results of these studies were, however, contradictory. Tykocinski (2001, Experiment 2) compared retrospective judgments made by supporters of winning versus losing candidates and found that negative outcomes were retrospectively perceived as more likely to occur than positive outcomes. This effect was explained in terms

of retrospective pessimism (see also Tykocinski, Pick, & Kedmi, 2002; Tykocinski & Steinberg, 2005). In the wake of an undesired outcome, people would retrospectively deny having had any chance of succeeding, to reduce cognitive dissonance.

As already discussed above, however, several studies on hindsight bias in various domains found effects in the opposite direction, with positive outcomes being perceived as more (and not less) foreseeable than negative ones (Arkes et al., 1988; Louie, 1999; Mark, Boburka, Eyssell, Cohen, & Mellor, 2003; Mark & Mellor, 1991; Pezzo & Beckstead, 2008). Such inconsistency may be drawn back to two main factors (Blank & Peters, 2010). The first factor is the degree of control that individuals have in different scenarios, which is typically low in the case of elections, as compared to other domains. The second and most crucial factor is the different hindsight level considered in different studies, as reverse-hindsight has been shown to be more common when the inevitability rather than the foreseeability level is considered (see Blank & Peters, 2010, p. 358, for a review). Consistently, Lamberty and colleagues (2018) found that the supporters of the winning candidate deemed the electoral outcome as more retrospectively foreseeable than the supporters of the losing candidate.

Another key factor that might explain the inconsistency of previous findings on the relationship between outcome valence and retrospective foreseeability in the electoral domain is the subjective rather than objective nature of the outcome valence. Real-life events often do not have clear-cut and *univocally* positive or negative outcomes, as these outcomes can be interpreted in different ways depending on the salience of different premises, goals, and terms of comparison. This is particularly the case of elections, where outcomes can be ambiguous or paradoxical. For example, a small and newly constituted party may not get enough votes to reach the majority or join a majority coalition, but still get votes far above initial expectations, eliciting a positive emotional reaction among its voters. On the contrary, a large and established party may earn a substantial share of votes, but nevertheless fare worse than initially expected, triggering in its voters an ambivalent, if not negative, emotional reaction. Therefore, an objective outcome (e.g., one party receiving a given number of votes) can lead to a wide range of subjective evaluations and emotional reactions, depending on how this outcome is interpreted in the light of the whole pre- and post-electoral context.

In the present research, we expected that the subjective assessment of the outcome, measured through outcome satisfaction, would influence voters' retrospective judgments more than the objective valence of the outcome itself.

RESEARCH OVERVIEW

To test our expectation regarding the link between satisfaction and retrospective foreseeability in the electoral context, we ran three studies, analyzing survey data from three different general elections which took place in Italy in 2006, 2013, and 2018.

The three elections differed from each other in several features: small or large number of competing parties, high or low a priori probability of the outcome, and

clear-cut or blurred boundaries between "winners" and "losers" in the electoral competition. In Study 1, we analyzed data from the large-scale and representative post-electoral survey conducted by ITANES after the 2006 Italian general elections, whose outcome was particularly close and controversial, with the Centre-left coalition prevailing over the Centre-right coalition by only a few thousand votes (and thereafter forming a parliamentary majority). In Study 2, we analyzed data from the ITANES post-electoral survey conducted after the 2013 Italian general elections. These elections differed from those of 2006 in two important regards: 1) the number of competing coalitions, which were four instead of two; and 2) the outcome, as none of the coalitions reached the number of seats needed to form a parliamentary majority. Finally, in Study 3 we analyzed data from the ITANES electoral panel survey conducted for the 2018 Italian general elections, which again had multiple competing coalitions, and yielded no clear parliamentary majority.

Across all three studies, we expected to find that retrospective foreseeability judgments would be positively associated with *satisfaction* with the electoral outcome, with satisfied voters seeing the outcome as more foreseeable than unsatisfied voters. This would be the case because, as discussed above, individuals experiencing positive emotional states are more inclined to overestimate the predictability of outcomes that satisfy their hopes and expectations (Bower & Forgas, 2000). We also tested whether satisfaction for the outcome would merely mediate the effect of vote choice on foreseeability, or whether it would explain some additional variance, thus indicating that subjective affective reactions independently influence, to a certain extent, retrospective judgements.

In Study 3, in addition to measuring retrospective foreseeability, we measured another more basic level of the hindsight bias, namely memory distortion. Through a panel survey, we first assessed participants' forecasts regarding the election results (in the pre-electoral survey) and then participants' *recall* of those forecasts (in the post-electoral survey). This allowed us to extend our analysis in two directions. First, we tested whether the association between satisfaction and retrospective foreseeability could be detected even after controlling for participants' actual forecasts, or more precisely, their accuracy compared to the actual results, thus accounting for voters' wishful thinking (Stiers & Dassonneville, 2018) or pessimistic forecasting. Second, we tested whether memory distortion would also be related with satisfaction, or rather whether it would depend on other factors more closely related to memory recollection performance and knowledge updating ability, as suggested by previous studies (Calvillo et al., 2014; Schacter et al., 2003).

STUDY 1

In Study 1, we investigated retrospective foreseeability judgments regarding the 2006 Italian general election. In that election, two large coalitions competed, the Centre-right coalition led by the incumbent Prime Minister Silvio Berlusconi and the Centre-left coalition led by Romano Prodi. The two coalitions received a combined 99.6% of total votes, with the Centre-left coalition prevailing by only 24,000 votes (49.81% vs. 49.74%). The result was therefore extremely close, but due to the

then-current electoral system, the Centre-left coalition was able to secure a majority in both legislative chambers.

We assessed whether satisfaction elicited by the electoral result would be associated with voters' retrospective foreseeability judgments, and in which direction. We expected participants' satisfaction to be strongly and positively associated with retrospective foreseeability, above and beyond the effect of vote choice for the winning or the losing coalition.

METHOD

Participants and Procedure. We analyzed data from the 2006 ITANES post-electoral survey. Participants were 1,377 eligible voters who were randomly selected using a probability sampling technique and individually interviewed face-to-face between mid-May and mid-June 2006, that is 6 to 8 weeks after the election days of April 9th and 10th.

Measures. As the questionnaire included many questions, only the measures relevant to the present study are described below.

Satisfaction with the electoral outcome. Participants' emotional reaction to the electoral outcome was measured by asking to what extent they felt satisfied when they thought about the outcome of the recent election. Responses were recorded on a 4-point scale ranging from 1 (not at all) to 4 (very much).

Retrospective foreseeability. Participants' evaluation of the retrospective foreseeability of the outcome was measured with the following question: "Before April 9th many forecasts were made regarding the outcome of the election. In your opinion, how foreseeable was it that the Centre-left would win?" Responses were recorded on a 7-point scale ranging from 1 (not foreseeable at all) to 7 (very foreseeable).

Vote choice. Participants' vote choice was measured by asking whether they had voted in the election and their vote choice. Participants had the option to choose from a list including the 18 parties which had run for election to the House of Representatives, or to decline responding. Valid party choices were then recoded into two main categories: vote for a party in the Centre-left coalition (i.e., the winning coalition; $N = 602$) and vote for a party in the Centre-right coalition (i.e., the losing coalition; $N = 455$). Participants who reported not having voted ($N = 194$) were also included, as a third group. Finally, voters of minor parties outside the main coalitions ($N = 2$) and voters who declined to indicate their choice ($N = 124$) were excluded from the main analyses. The final number of participants included in the analyses was therefore $N = 1,251$.

Socio-demographic characteristics. Participants' gender was recorded as male (49%) or female (51%), assigning the value –1 to females and 1 to males. Participants were also asked to report their year of birth. This value was later subtracted from 2006 to

compute participants' age (ranging from 18 to 91, $M = 47.92$, $SD = 17.49$). Finally, education level was recorded with a question asking participants to indicate their highest education level among 10 possible options. The answers were recoded as the average years of attendance in the education system, ranging from 4 to 18.

RESULTS

Effects of Vote Choice on Satisfaction. Voters of the winning Centre-left coalition were significantly more satisfied ($M = 3.02$, $SD = 0.67$) with the electoral result than both voters of the losing Centre-right coalition ($M = 1.54$, $SD = 0.66$) and non-voters ($M = 2.35$, $SD = 0.89$), $F(1, 1220) = 584.42$, $p < .001$, $\eta = .49$. Similarly, voters of the Centre-left coalition reported seeing the outcome as more foreseeable ($M = 5.41$, $SD = 1.27$) than both voters of the losing Centre-right coalition ($M = 4.08$, $SD = 1.72$) and non-voters ($M = 4.65$, $SD = 1.48$), $F(1, 1220) = 123.21$, $p < .001$, $\eta = .15$.

Predictors of Retrospective Foreseeability. To test our hypothesis that satisfaction would be associated with retrospective foreseeability beyond and above vote choice for the "winner" or the "loser" coalition, we ran a multiple linear regression model with retrospective foreseeability as the dependent variable. Three blocks of predictors were entered in the model in a stepwise fashion: In Step 1, we entered socio-demographic variables (gender, age, education); in Step 2 we entered two dummy variables representing vote for the Centre-left and vote for the Centre-right coalition respectively (using non-voters as the reference group); finally, in Step 3 we entered the degree of satisfaction with the electoral outcome.

The results of the analysis, including unstandardized coefficients, 95% confidence intervals, and multicollinearity diagnostics (VIFs, see Thompson, Kim, Aloe, & Becker, 2017), are reported in Table 1. Overall, socio-demographic variables had limited predictive power, $F(3, 1165) = 3.99$, $p = .008$, $R^2 = .010$, whereas the introduction of vote choice in Step 2 significantly increased the explained variance, $\Delta F(2, 1163) = 99.20$, $p < .001$, $\Delta R^2 = .144$, with vote for the winning Centre-left coalition being associated with higher foreseeability, $\beta = .240$, $t = 5.53$, $p < .001$, and, conversely, vote for the losing Centre-right coalition being associated with lower foreseeability, $\beta = –.163$, $t = 3.77$, $p < .001$. The introduction of satisfaction in Step 3 further increased the variance explained by the model, $\Delta F(1, 1162) = 60.11$, $p < .001$, $\Delta R^2 = .042$. The more participants were satisfied with the election result, the more they saw it as foreseeable, and the effect was a strong one, $\beta = .288$, $t = 7.75$, $p < .001$, whereas the effect of the vote for the winning coalition was reduced, $\beta = .147$, $t = 3.34$, $p = .001$, and vote for the losing coalition was no longer significant, $\beta = –.040$, $t = 0.90$, $p = .371$.

Overall, these results corroborated our hypothesis that satisfaction would be directly and positively associated with participants' tendency to overestimate the foreseeability of the electoral outcome. Also consistent with our expectation, results showed that the satisfaction effect exceeded the variance already accounted for by vote for the winning or, conversely, the losing coalition. This finding confirmed that the subjective evaluation of the outcome played a role in retrospective

TABLE 1. Hierarchical Regression Model of the Retrospective Foreseeability of the 2006 Italian National Election Outcome (Study 1)

	B	S.E.	β	*t*	*p*	LL 95% C.I.	UL 95% C.I.	sr^2	VIF
1 (Constant)	9.323	6.198		1.504	.133	–2.838	21.484		
Gender	–.133	.094	–.041	–1.415	.157	–.319	.052	–.041	1.008
Age	–.002	.003	–.025	–.775	.439	–.009	.004	–.023	1.253
Education	.030	.013	.075	2.278	.023	.004	.057	.066	1.262
2 (Constant)	11.841	5.738		2.064	.039	.583	23.100		
Gender	–.156	.087	–.049	–1.792	.073	–.328	.015	–.048	1.008
Age	–.004	.003	–.039	–1.293	.196	–.009	.002	–.035	1.255
Education	.020	.012	.049	1.619	.106	–.004	.044	.044	1.272
Vote Choice									
Centre-Left	.772	.140	.240	5.532	.000	.498	1.046	.149	2.580
Centre-Right	–.542	.144	–.163	–3.766	.000	–.825	–.260	–.102	2.569
3 (Constant)	7.534	5.625		1.339	.181	–3.503	18.571		
Gender	–.207	.085	–.064	–2.427	.015	–.375	–.040	–.064	1.014
Age	–.002	.003	–.022	–.759	.448	–.008	.003	–.020	1.261
Education	.026	.012	.064	2.160	.031	.002	.050	.057	1.277
Vote Choice									
Centre-Left	.473	.142	.147	3.344	.001	.196	.751	.088	2.787
Centre-Right	–.134	.150	–.040	–.895	.371	–.429	.160	–.024	2.930
Satisfaction	.480	.062	.288	7.753	.000	.359	.602	.204	2.002

Source: ITANES 2006.

foreseeability judgments, above and beyond the mere fact of being on the winning or the losing side of the election.

STUDY 2

In Study 2, we tested whether the strong association between satisfaction and retrospective foreseeability found in Study 1 would be replicated in a different general election, the one that took place in Italy in 2013. Unlike the 2006 election, in 2013 the major political forces were four rather than two: the Centre-left coalition, the Centre-right coalition, the Civic Choice coalition (an assembly of small centrist parties), and a new political force, the Five-Star Movement, which participated in a general election for the first time. Due to its outsider status and its peculiar political stances (e.g., most party members refused to position themselves on the traditional left-right axis), the Five-Star Movement was initially considered a protest movement with few chances of receiving significant mainstream support in the election.

While both the Centre-left and Centre-right coalitions saw their share of votes substantially reduced compared to previous elections (receiving respectively

29.55% and 29.18% of votes), and the Civic Choice coalition obtained a limited share of votes (10.56%), the Five-Star Movement entered Parliament as the third largest political force (with 25.56% of votes). No clear parliamentary majority emerged, leading to several months of political stalemate. In the end, a government supported by Centre-left, Centre-right, and Civic Choice parties was formed, with the Five-Star Movement remaining in the opposition.

Although the 2013 political scenario was very different from the one in 2006, in Study 2 we again expected that satisfaction with the electoral outcome would be positively associated with the retrospective foreseeability of the outcome, as in Study 1. A confirmation of our hypothesis in the 2013 political scenario would be important because it would corroborate the potential divergence between the objective electoral result and its subjective evaluation among voters. The Five-Star Movement, which appeared for the first time on the political scene, indeed received a smaller share of votes as compared to the Center-left and the Center-right coalition, and did not enter in the majority coalition, but it was largely considered the "moral" winner of the elections. If our hypothesis was corroborated in this peculiar scenario, it would provide robust support for the idea that the biasing factor in retrospective foreseeability judgments is the voters' satisfaction with the electoral outcome, and not the outcome itself.

METHOD

Participants and Procedure. In Study 2, we analyzed data from the 2013 ITANES post-electoral survey. Participants were 3,008 eligible voters who joined an online study ran by the ITANES group after the February 24th–25th Italian general election. They were randomly selected using a probability sampling technique and administered an online questionnaire between March 26th and April 4th, that is 6 to 8 weeks after the election.

Measures. As in the case of Study 1, the questionnaire included several measures, and only the measures relevant to the present study are reported below.

Satisfaction with the electoral outcome. Satisfaction was measured by asking participants how satisfied they felt regarding the result of the election. Responses were recorded on an 11-point scale, ranging from 0 (not satisfied at all) to 10 (very satisfied).

Retrospective foreseeability. The participants' evaluation of the retrospective foreseeability of the electoral outcome was measured with the following question: "In your opinion, how foreseeable was the result of the election?" Responses were recorded on an 11-point scale, ranging from 0 (not foreseeable at all) to 10 (very foreseeable).

Vote choice. As in Study 1, vote choice was measured asking participants whether they had voted in the election and for which party. Participants chose from a list of the 24 parties which had run for the House of Representatives. As in Study 1, part

of the initial sample declined to report their vote choice and were excluded from the analyses (N = 372). The remaining participants were sorted into six groups: voters of the Centre-left coalition (N = 708), voters of the Centre-right coalition (N = 574), voters of the Civic Choice coalition (N = 229), voters of the Five-Star Movement (N = 681), voters of other minor parties (N = 141), and non-voters (N = 303). The final number of participants included in the analyses was N = 2,636.

Socio-demographic characteristics. Participants' gender was recorded as male (48.8%) or female (51.2%) and coded as in Study 1. Participants' year of birth was subtracted from 2013 to compute age (ranging from 18 to 89, M = 47.92, SD = 17.49). Finally, participants' education level was computed with the same procedure used in Study 1.

RESULTS

Effects of Vote Choice on Satisfaction. Voters of the Five-Star Movement reported being significantly more satisfied with the election results (M = 5.72, SD = 2.98) than the voters of the other coalitions, namely, the Centre-right coalition (M = 3.68, SD = 2.68), the Centre-left coalition (M = 2.94, SD = 2.28), the Civic Choice coalition (M = 3.31, SD = 2.45), minor parties (M = 3.23, SD = 2.74), or non-voters (M = 3.79, SD = 2.81), $F(5, 2592) = 86.00$, $p < .001$, $\eta^2 = .14$. Thus, although both the Centre-left and Centre-right coalitions received in absolute terms larger percentages of votes than the other two political forces, voters of the Five-Star Movement were the most satisfied with the outcome. This was very likely because the Five-Star Movement was at its first appearance in a general election and nonetheless received large electoral support. Conversely, voters of the Centre-left and Centre-right coalitions, as well as those of the Civic Choice coalition led by the incumbent Prime Minister Mario Monti, were significantly less satisfied, probably due to the underwhelming performance of their respective coalitions as compared to previous elections.

Predictors of Retrospective Foreseeability. To test our hypothesis that satisfaction with the electoral outcome would predict the retrospective foreseeability of the outcome, we ran a multiple linear regression model like the one employed in Study 1. The only difference was that, since in the 2013 general elections the main competing political forces were four rather than two, we included five dummy-coded variables, each representing vote for one of the four main coalitions or minor parties (coded 1), in contrast to non-voters (coded 0). The results of the regression analysis are reported in Table 2. In Step 1, socio-demographic characteristics had little effect on retrospective foreseeability of the electoral outcome, $F(3, 2581) = 3.23$, $p = .021$, $R^2 = .004$, with participants' age being positively associated with retrospective foreseeability, $\beta = .063$, $t = 3.09$, $p = .002$. In Step 2, the addition of the vote choice variables as predictors increased the variance explained by the model, $\Delta F(5, 2576) = 14.09$, $p < .001$, $\Delta R^2 = .027$, with a significant negative effect on retrospective foreseeability of vote for the Centre-left coalition, $\beta = -.129$, $t = 4.05$, $p < .001$, and an opposite effect of vote for the Five-Star Movement, $\beta = .066$, $t = 2.10$, $p = .036$.

TABLE 2. Hierarchical Regression Model of the Retrospective Foreseeability of the 2013 Italian National Election Outcome (Study 2)

	B	S.E.	β	*t*	*p*	LL 95% C.I.	UL 95% C.I.	sr^2	VIF
1 (Constant)	6.283	.364		17.267	.000	5.570	6.997		
Gender	–.004	.107	–.001	–.036	.971	–.214	.207	–.001	1.011
Age	.011	.003	.063	3.091	.002	.004	.017	.061	1.085
Education	.009	.016	.012	.572	.567	–.022	.041	.011	1.088
2 (Constant)	5.938	.393		15.116	.000	5.168	6.708		
Gender	.011	.107	.002	.100	.920	–.199	.220	.002	1.024
Age	.016	.004	.094	4.519	.000	.009	.023	.088	1.157
Education	.024	.016	.031	1.513	.130	–.007	.056	.029	1.104
Vote Choice									
Centre-Left	–.786	.194	–.129	–4.053	.000	–1.167	–.406	–.079	2.683
Civic Choice	–.189	.242	–.020	–.780	.436	–.664	.286	–.015	1.685
5-Star Movement	.406	.193	.066	2.103	.036	.027	.784	.041	2.579
Centre-Right	.056	.201	.008	.277	.781	–.338	.449	.005	2.481
Other Parties	–.297	.280	–.025	–1.061	.289	–.847	.252	–.021	1.438
3 (Constant)	5.400	.399		13.542	.000	4.618	6.182		
Gender	.030	.106	.006	.285	.776	–.178	.238	.005	1.025
Age	.016	.003	.097	4.703	.000	.010	.023	.091	1.157
Education	.024	.016	.031	1.518	.129	–.007	.055	.029	1.104
Vote Choice									
Centre-Left	–.673	.193	–.110	–3.483	.001	–1.053	–.294	–.067	2.706
Civic Choice	–.120	.241	–.012	–.496	.620	–.592	.353	–.010	1.688
5-Star Movement	.173	.195	.028	.886	.376	–.210	.555	.017	2.673
Centre-Right	.075	.199	.011	.379	.705	–.315	.466	.007	2.482
Other Parties	–.220	.279	–.018	–.789	.430	–.766	.326	–.015	1.440
Satisfaction	.126	.020	.133	6.393	.000	.087	.164	.123	1.168

Source: ITANES 2013.

Finally, the introduction of satisfaction in the model further increased the explained variance, $\Delta F(1, 2{,}575) = 40.87$, $p < .001$, $\Delta R^2 = .015$, and a highly significant effect of satisfaction on retrospective foreseeability was found, $\beta = .133$, $t = 6.39$, $p < .001$. As in Study 1, the more participants were satisfied with the electoral outcome, the more they considered it foreseeable, regardless of the party or coalition they had voted for.

Overall, the results of Study 2 confirmed and extended the results of Study 1. They showed that, in a different election and with a different number of contending parties (none of which could be objectively identified as the "winner" of the competition), satisfaction with the electoral outcome was still positively associated with retrospective foreseeability. The effect of satisfaction again surpassed

the effect of vote choice, further supporting our hypothesis that retrospective foreseeability is influenced by the subjective value attributed by individuals to the outcome, rather than by the objective outcome itself.

STUDY 3

In Study 3, we further investigated the association between satisfaction with an electoral outcome and its retrospective foreseeability, collecting data before and after the 2018 Italian general election. In 2018, the electoral competition was multipolar, as was the 2013 competition analyzed in Study 2, but the composition of the main coalitions changed again, with the Centre-left coalition splitting between a coalition composed of the Democratic Party and its allies, and a newly formed independent party named Liberi e Uguali (LEU, i.e., Free and Equal) positioning itself at the left end of the political spectrum. The Five-Star Movement ran again alone, and the Centre-right coalition was the same as in 2013. In addition to the changes in the political landscape, the adoption of a new electoral system contributed to make the outcome uncertain. This uncertainty persisted after the election took place. The Centre-right coalition received the highest share of votes (37%), but it failed to achieve a parliamentary majority, as did the other competing parties and coalitions, that is the Five-Star Movement (32.68%), the Centre-left coalition (22.86%), and LEU (3.39%). After several weeks of political bargaining, a novel coalition government was formed, supported by the Five-Star Movement and the League party, a far-right populist party, which had splintered from the Centre-right coalition during the post-election talks.

So, in 2018 the political scenario was still different from those of 2006 (Study 1) and 2013 (Study 2). This notwithstanding in Study 3, as in Study 1 and 2, we still expected participants' retrospective foreseeability judgments to be associated with their satisfaction with the outcome. And once again, we moved from the assumption that satisfaction would not necessarily align with the share of votes obtained by the party or coalition for whom participants had voted.

In 2018, the ITANES survey was conducted with a panel design, and for the first time we had the possibility to assess forecasts regarding the expected results *before* the election, as well as to assess the recollection of those forecasts *after* the election. Therefore, in Study 3 we were able to measure not only the retrospective evaluation of the foreseeability of the outcome, but also whether the initial forecasts were accurate and, crucially, whether participants correctly remembered them, that is, participants' degree of memory distortion. Unlike what we expected for foreseeability, we did not expect, however, that memory distortion would be associated with post-electoral satisfaction.

METHOD

Participants and Procedure. In Study 2, we analyzed data from the 2018 ITANES pre- and post-electoral survey. A subset (N = 1,402) of the full sample was administered both the pre-electoral and the post-electoral survey module containing the

measures used in this study. Participants were randomly selected from a representative sample of eligible voters, who joined the 2018 ITANES online panel survey administered from January 15th to March 3rd (pre-electoral survey), and then from March 5th to April 4th (post-electoral survey).

Measures.

Satisfaction with the electoral outcome. Satisfaction was measured by asking participants how satisfied they felt regarding the result of the election. Responses were recorded on an 11-point scale, ranging from 0 (not satisfied at all) to 10 (very satisfied).

Retrospective foreseeability. The participants' evaluation of the retrospective foreseeability of the electoral outcome was measured with the following question: "In your opinion, how foreseeable was the result of the election?" Responses were recorded on an 11-point scale ranging, from 0 (not foreseeable at all) to 10 (very foreseeable).

Pre-electoral forecast. In the pre-electoral survey, participants were asked to report their forecasts regarding the outcome of the election. Participants read the following prompt: "Before an election, people often make forecasts regarding the outcome of the vote. Using a scale from 0% to 100%, can you indicate what is the percentage of votes that the following coalitions and parties will get, in your opinion? If you cannot provide an answer, please type 999." The prompt was followed by the names of the four main parties and coalitions and a text box to insert each forecast.

We anticipated that only participants who had made an honest prediction might experience the type of mnemonic distortion we aimed to investigate after the election, that is, a potential conflict between recalled predictions and newer information on the actual outcome. For this reason, we decided to exclude participants who did not fully complete the forecast task. Exclusion criteria were the following: 1) participants who did not respond to the question (e.g., leaving all four items blank, $N = 69$); 2) participants who gave a 0% score on at least one of the four items, given the extreme unlikelihood of one of the four major parties and coalitions failing to get any votes at all ($N = 102$); and 3) participants who gave a score above 60% on at least one of the items ($N = 74$). This last exclusion criterion was based on the fact that no single party or coalition has ever reached a simple majority (i.e., > 50% of votes) in Italian national elections. We therefore considered predicted scores above 60% as implausible. The application of the above exclusion criteria reduced the number of participants from 1,402 to 1,157.

Post-electoral recall. In the post-electoral survey, participants were asked to recall the forecasts they had made before the election, reporting the percentages they remembered having originally indicated for each party or coalition on the same 0%–100% scale. The same exclusion criteria used for pre-electoral forecasts were

applied, excluding participants who: 1) did not respond to the question (N = 13); 2) gave a 0% score on at least one item (N = 108); and 3) gave a score above 60% on at least one item (N = 39). These criteria reduced the number of participants from 1,157 to 997.

Memory distortion and forecast inaccuracy. The memory distortion index was computed following the procedure previously employed in studies on hindsight bias in multi-party electoral contexts (the Modified Fischer-Budescu Index, as reported in Blank et al., 2003; Blank et al., 2008; Fischer & Budescu, 1995). We first computed four measures of *foresight* distance, by subtracting the pre-election forecast from the actual percentage of votes received by each party or coalition. Then, we computed four measures of *hindsight* distance, subtracting the recalled forecasts from the actual percentages of votes. Finally, four difference scores were computed, subtracting the hindsight distance scores from the foresight distance scores, and a single average index was computed, representing the average memory distortion for each participant across the four main parties and coalitions. We also computed an index of participants' inaccuracy in formulating pre-electoral forecasts, averaging the foresight distance scores used in the memory distortion index.

Vote choice. In the post-electoral survey, participants were asked whether they had voted in the election and the party or list they had voted for. Self-reported vote choice was then recoded into six main categories: vote for the Five-Star Movement (N = 266), vote for a party in the Centre-left coalition (N = 191), vote for a party in the Centre-right coalition (N = 179), vote for the LEU party (N = 65), vote for minor parties (N = 40), and non-voters (N = 72). Those who declined reporting their vote choice (N = 184) were excluded from the analyses. The final number of participants included in the main analyses was therefore N = 813.

Socio-demographic characteristics. Participants' gender was recorded as male (55.6%) or female (44.4%) and coded as in the previous two studies. Participants' year of birth was subtracted from 2018 to compute age (ranging from 18 to 87, M = 46.2, SD = 13.56). Finally, participants' education level was computed with the same procedure used in Studies 1 and 2.

RESULTS

Effects of Vote Choice on Satisfaction. Voters of the Five-Star Movement reported being significantly more satisfied with the election results (M = 5.94, SD = 2.40) than voters of the Centre-right coalition (M = 5.22, SD = 2.48), non-voters (M = 3.72, SD = 2.51), voters of minor parties (M = 3.22, SD = 2.27), LEU (M = 2.60, SD = 1.97), and the Centre-left coalition (M = 2.18, SD = 1.60), $F(5, 807) = 80.43$, $p < .001$, $\eta^2 = .33$. Therefore, as in Study 2, the voters of the Five-Star Movement were the most satisfied with the electoral outcome, even if the vote share of the Five-Star Movement was not the highest in the election. This is not surprising, because the Five-Star Movement, with its large success in the 2013 general election, further increased its

consensus in the 2018 election and eventually joined its first government. Therefore, in Study 3 the absence of a strong bi-univocal relation between satisfaction and the actual percentage of votes received by the chosen party confirmed once again the presence of some differentiation between the objective electoral outcome and the voters' subjective assessment of it.

Retrospective Foreseeability, Memory Distortion, and Forecast Inaccuracy. Retrospective foreseeability and memory distortion were positively but weakly correlated, $r(811) = .079$, $p = .025$, indicating limited overlap between the two components of hindsight bias. Notably, whereas memory distortion was strongly and positively associated with forecast inaccuracy, $r(811) = .503$, $p < .001$, retrospective foreseeability was more weakly and negatively associated with it, $r(811) = –.105$, $p = .003$.

Predictors of Retrospective Foreseeability. To test our hypothesis according to which satisfaction with the electoral outcome would predict the retrospective foreseeability of the outcome, we ran a multiple linear regression model with foreseeability as the dependent measure. The same predictors used in Study 2, including five dummy variables representing vote choice for the four main parties and coalitions and minor parties, were entered in a stepwise fashion, with the addition of the index of pre-electoral forecast inaccuracy, which was not available in the previous studies. The results are reported in Table 3.

In Step 1 socio-demographic characteristics had a small but significant effect, $F(3, 809) = 3.10$, $p = .011$, $R^2 = .011$, due to a lower retrospective foreseeability among older participants, $\beta = –.090$, $t = 2.46$, $p = .014$. In Step 2, the addition of the vote choice variables as predictors significantly increased the variance explained by the model, $\Delta R^2 = .016$, $\Delta F(5, 804) = 2.59$, $p = .024$. Both votes for LEU, $\beta = .110$, $t = 2.39$, $p = .017$, and the Five-Star Movement, $\beta = .157$, $t = 2.53$, $p = .012$, were positively associated with foreseeability. Finally, the introduction of satisfaction and forecast inaccuracy in the model further increased the explained variance, $\Delta R^2 = .016$, $\Delta F(2, 802) = 6.71$, $p = .001$, with a positive and significant effect of satisfaction, $\beta = .125$, $t = 2.95$, $p = .003$, and a negative and significant effect of inaccuracy, $\beta = –.084$, $t = 2.29$, $p = .023$. Therefore, as in Study 1 and Study 2, participants' satisfaction was the main predictor of retrospective foreseeability, even when the inaccuracy of the original forecast was accounted for in the model.

Predictors of Memory Distortion. To test the predictors of memory distortion, we carried out a regression analysis with memory distortion as the dependent variable and with the same blocks of predictors employed in the regression analysis on retrospective foreseeability (Table 4).

In Step 1, no effect of socio-demographic characteristics was found, $F(3, 809) = 0.63$, $p = .60$, $R^2 = .002$. In Step 2, the addition of the vote choice variables significantly increased the explained variance of the model, $\Delta R^2 = .298$, $\Delta F(5, 804) = 3.96$, $p = .001$, although no single predictor had a significant effect alone. Finally, in Step 3, the introduction of satisfaction and forecast inaccuracy substantially increased the explained variance, $\Delta R^2 = .278$, $\Delta F(2, 802) = 160.49$, $p < .001$.

TABLE 3. Hierarchical Regression Model of the Retrospective Foreseeability of the 2018 Italian National Election Outcome (Study 3)

		B	S.E.	β	*t*	*p*	LL 95% C.I.	UL 95% C.I.	sr^2	VIF
1	(Constant)	6.561	.581		11.294	.000	5.421	7.701		
	Gender	–.226	.148	–.054	–1.533	.126	–.516	.063	–.054	1.012
	Age	.014	.006	.090	2.463	.014	.003	.025	.086	1.096
	Education	.019	.026	.027	.752	.452	–.031	.069	.026	1.086
2	(Constant)	6.033	.620		9.724	.000	4.815	7.250		
	Gender	–.223	.147	–.053	–1.511	.131	–.512	.067	–.053	1.017
	Age	.014	.006	.092	2.496	.013	.003	.026	.087	1.118
	Education	.025	.026	.035	.965	.335	–.026	.075	.034	1.114
	Vote Choice									
	LEU	.849	.356	.110	2.387	.017	.151	1.547	.083	1.764
	Centre-Left	.229	.289	.046	.792	.428	–.338	.796	.028	2.841
	5-Star Mov.	.699	.276	.157	2.533	.012	.157	1.240	.088	3.177
	Centre-Right	.310	.290	.062	1.068	.286	–.260	.880	.037	2.746
	Other Parties	.232	.410	.024	.566	.571	–.573	1.037	.020	1.491
3	(Constant)	5.991	.655		9.145	.000	4.705	7.277		
	Gender	–.132	.151	–.031	–.874	.382	–.428	.164	–.030	1.080
	Age	.013	.006	.086	2.307	.021	.002	.025	.080	1.151
	Education	.021	.026	.030	.822	.411	–.029	.071	.028	1.122
	Vote Choice									
	LEU	.904	.355	.117	2.544	.011	.207	1.602	.088	1.787
	Centre-Left	.330	.291	.067	1.134	.257	–.241	.902	.039	2.930
	5-Star Mov.	.443	.284	.100	1.557	.120	–.115	1.001	.054	3.422
	Centre-Right	.093	.295	.018	.315	.753	–.486	.671	.011	2.864
	Other Parties	.290	.408	.030	.711	.477	–.510	1.090	.025	1.493
	Forecast Inaccuracy	–.044	.019	–.084	–2.286	.023	–.082	–.006	–.079	1.123
	Satisfaction	.096	.033	.125	2.945	.003	.032	.160	.102	1.508

Source: ITANES 2018.

Forecast inaccuracy was by far the strongest predictor of memory distortion, β = .559, t = 17.91, $p < .001$, as participants who had made less accurate forecasts tended to shift their recalled predictions more in the direction of the actual outcomes. Satisfaction, conversely, was not significantly associated with memory distortion, β = –.047, t = 1.30, p = .192. Interestingly, with the introduction of inaccuracy and satisfaction in the model, significant effects of participants' gender, β = .135, t = 4.41, $p < .001$, and education, β = .065, t = 2.09, p = .037, emerged, indicating that once all the other variables were accounted for, female participants and those with higher education were more prone to memory distortion. This was

TABLE 4. Hierarchical Regression Model of Memory Distortion in the Recollection of Forecasts on the 2018 Italian National Election Outcome (Study 3)

		B	S.E.	β	*t*	*p*	LL 95% C.I.	UL 95% C.I.	sr^2	VIF
1	(Constant)	.160	1.108		.145	.885	–2.014	2.335		
	Gender	–.035	.282	–.004	–.123	.902	–.587	.518	–.004	1.012
	Age	–.006	.011	–.021	–.560	.576	–.028	.015	–.020	1.096
	Education	.051	.049	.038	1.043	.297	–.045	.146	.037	1.086
2	(Constant)	.821	1.178		.697	.486	–1.492	3.134		
	Gender	–.028	.280	–.003	–.099	.921	–.577	.521	–.003	1.017
	Age	–.009	.011	–.031	–.831	.406	–.031	.012	–.029	1.118
	Education	.027	.049	.021	.563	.574	–.068	.123	.020	1.114
	Vote Choice									
	LEU	–.783	.676	–.054	–1.159	.247	–2.109	.543	–.040	1.764
	Centre-Left	.244	.548	.026	.444	.657	–.833	1.320	.015	2.841
	5-Star Mov.	–.864	.524	–.102	–1.649	.099	–1.893	.164	–.057	3.177
	Centre-Right	.087	.552	.009	.157	.875	–.996	1.169	.005	2.746
	Other Parties	1.499	.779	.082	1.925	.055	–.030	3.027	.067	1.491
3	(Constant)	–3.861	1.060		–3.642	.000	–5.942	–1.780		
	Gender	–1.076	.244	–.135	–4.414	.000	–1.555	–.598	–.130	1.080
	Age	.017	.009	.057	1.805	.072	–.001	.035	.053	1.151
	Education	.087	.041	.065	2.089	.037	.005	.168	.062	1.122
	Vote Choice									
	LEU	–.251	.575	–.017	–.436	.663	–1.380	.879	–.013	1.787
	Centre-Left	.654	.471	.070	1.388	.166	–.271	1.579	.041	2.930
	5-Star Mov.	–.211	.460	–.025	–.458	.647	–1.114	.692	–.013	3.422
	Centre-Right	1.072	.477	.112	2.248	.025	.136	2.007	.066	2.864
	Other Parties	1.282	.659	.070	1.944	.052	–.012	2.577	.057	1.493
	Forecast Inaccuracy	.558	.031	.559	17.905	.000	.496	.619	.527	1.123
	Satisfaction	–.069	.053	–.047	–1.303	.193	–.173	.035	–.038	1.508

Source: ITANES 2018.

the case also for participants who had voted for the Centre-right coalition, β = .112, $t = 2.25$, $p = .025$.

In sum, the results of Study 3 confirmed and extended the results of the previous two studies. First, as in Study 1 and Study 2, satisfaction with the electoral outcome was positively associated with retrospective foreseeability, and this association held true above and beyond the association with vote choice and with the actual accuracy of pre-electoral forecasts. In addition, in Study 3 we investigated a second relevant component of hindsight bias, namely memory distortion. We found that this component was heavily affected by how accurate participants'

forecasts were, whereas post-electoral satisfaction did not influence it. In sum, the lack of association between satisfaction with the outcome and memory distortion confirmed that the biasing effect of the subjective emotional reaction to the outcome affected retrospective judgments on its foreseeability, but not the actual memory retrieval process.

GENERAL DISCUSSION

In our research, we systematically investigated hindsight bias in three different general elections, focusing on the relationship between the retrospective foreseeability of the election outcome and voters' satisfaction with this outcome. The results of our three studies, which involved large representative samples of voters involved in the ITANES surveys, consistently confirmed the expected link between satisfaction with the electoral outcome and retrospective foreseeability, with higher satisfaction being constantly associated with a stronger tendency to perceive the electoral outcome as more foreseeable. In all studies, the positive association between satisfaction and retrospective foreseeability emerged above and beyond the association with vote choice. In Study 3, the same association with satisfaction was not found in the case of another level of the hindsight bias, that is, memory distortion, which instead mainly depended on how far from the actual electoral results the initial forecasts were, as well as on some individual characteristics, such as gender and education.

Our results provide further empirical support to the theoretical models describing hindsight bias as a complex phenomenon, with hierarchically organized levels ranging from basic memory processes to motivated reasoning processes pertaining to self- and group evaluation (Blank et al., 2008; Nestler et al., 2010, Roese & Vohs, 2012). They also provide new insights on how to measure and understand this phenomenon.

First, we showed that the subjective evaluation of an outcome, measured through the degree of satisfaction with the outcome, predicts retrospective foreseeability and does so more consistently and robustly than other previously considered indicators, such as vote for the "winning" or "losing" side in an election. Past research had proposed different hypotheses on how, and under what circumstances, the positive or negative valence attributed to an outcome can unknowingly sway our assessment of its foreseeability, but empirical findings have been largely inconsistent (see Pezzo & Beckstead, 2008; Pezzo & Pezzo, 2007; Tykocinski & Steinberg, 2005). We argued that the inherent complexity of these judgments should be taken into consideration when analyzing the phenomenon, particularly in the case of research on voters' evaluation of electoral results. As a long and solid tradition of work on framing effects in prospective and retrospective judgment has repeatedly shown (Druckman, 2001; Tversky & Kahneman, 1981), people do not evaluate events in a cognitive vacuum; they include in their evaluations their hopes, fears, and expectations, as well as other salient elements of the context.

Based on our findings, we can conclude that individuals see subjectively satisfying results as more foreseeable than unsatisfying ones. This is consistent with

previous research highlighting the impact of mood and emotions on judgment (Greifeneder et al., 2011), and of self- and group-serving motivations on retrospective judgments (Pezzo & Pezzo, 2007). The desire to perceive ourselves as able to make good predictions and, most relevant in the political field, the desire to see our party or coalition as bound to succeed and gain power may therefore induce us to evaluate satisfying results in a biased way.

The results of Study 3 showed that such effect is limited to the retrospective foreseeability level of hindsight bias, whereas the memory distortion level is mainly affected by the accuracy (or lack thereof) of the initial forecast. In our findings, memory distortion was also connected with gender. The greater memory distortion among female participants, as well the disproportionate number of females among participants who failed to complete the pre-electoral forecast task, might reflect differences in political knowledge and interest (Delli Carpini & Keeter, 2000; Dow, 2009; Karp & Banducci, 2008). Female voters are comparatively less engaged by certain aspects of political contests, such as the "horse-race" coverage of pre-electoral polls and post-election vote tallies (Barabas, Jerit, Pollock, & Rainey, 2014; Stolle & Gidengil, 2010). Therefore, they might also be less accurate in making forecasts and perform worse when asked to recall them (McGlone, Aronson, & Kobrynowicz, 2006). The effect of age on memory distortion was not significant, despite previous research indicating that the cognitive decline associated with age can impair the recollection of one's past predictions (Coolin et al., 2014; Pohl et al., 2018).

LIMITATIONS

Our research has some limitations that might be addressed by future research. We used data from large collaborative surveys which, for practical reasons, devoted only little space to the constructs we were interested in, such as voters' pre-electoral forecasts, post-electoral emotional reactions to the outcome, and retrospective foreseeability. The available data therefore included measures of memory distortion and retrospective foreseeability, whereas the perceived inevitability of electoral outcomes was not assessed. So, the large scale of the surveys and the significance of the events investigated compared favorably with previous studies conducted mainly with small groups of participants in laboratory settings and involving fictional scenarios or simple everyday life events (Pezzo & Beckstead, 2008; Pohl, 2007), but it also limited the number and range of measures we could collect and analyze.

Another limitation deriving from the type of data we analyzed was the lack of information on the cognitive processes underlying the observed effects, particularly regarding the crucial link between participants' emotions and their evaluation of the outcome. Future research might usefully investigate how emotions feed into the retrospective evaluations of events, particularly in the political context, and of one's ability to understand and predict them.

The large inter-individual variability in retrospective foreseeability judgments and memory distortion scores found in our studies indicates that further factors

need to be investigated to obtain a more precise picture of the phenomenon. The very act of making plausible forecasts on electoral results proved challenging for many participants in Study 3, as indicated by the number of responses that failed to meet our inclusion criteria. Future research might investigate the factors that affect individuals' ability to perform this particular task, from survey-specific ones, such as the wording of questions, to context-specific ones, such as differences in political interest (Delli Carpini & Keeter, 2000) and sophistication (Federico & Schneider, 2007; Taber, Cann, & Kucsova, 2009), to those pertaining to the limits of cognitive representation of percentages and numerical formats (Krämer & Gigerenzer, 2005; Slovic, Monahan, & McGregor, 2000).

Finally, the possible links between retrospective judgments and prospective judgments, such as political participation intention (Catellani & Milesi, 2011) and propensity to vote (van der Eijk, Van der Brug, Kroh, & Franklin, 2006), are also worth being explored.

CONCLUSION

The results of our three studies have consistently shown that an emotion like satisfaction affects retrospective judgments regarding the foreseeability of an outcome, above and beyond the "objective" positive or negative valence of the outcome itself. As such, our research contributes to advancement of the study of motivational factors underlying the hindsight bias.

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