EMOTIONS, BELIEFS, AND POLICY VIEWS

Elena Manzoni
University of Bergamo, Italy

Elie Murard
University of Trento, Italy

Simone Quercia
University of Verona, Italy

Sara Tonini
University of Bolzano, Italy

Abstract
How do emotions affect policy views? How do they influence the way people process factual information? We address these questions using a survey experiment in Italy, which randomly exposes 12,000 participants to (i) sensational news about immigrant crimes, (ii) statistical information about immigration, or (iii) the combination of both. First, we find that highly emotional news stories significantly increase the demand for anti-immigration policies, while less emotional news has a smaller or no impact. Consistent with a causal role of emotions, this differential effect persists when we provide statistical information that holds posterior beliefs constant across the different news treatments. Second, we find that providing information generally helps correct factual beliefs, even though learning is slightly disrupted when participants are emotionally triggered. Third, we show that emotions strongly influence whether belief updating leads to changes in policy views. When presented alone, factual information reduces anti-immigration attitudes. When paired with emotional news, the emotional reaction overrides the effect of information, leading participants to adopt anti-immigration views as strongly as when exposed to emotional news alone. Once negative emotions are triggered, having more accurate factual knowledge no longer matters for forming policy views. (JEL: C90, D72, D83, D91, F22, J15)

The editor in charge of this paper was Christopher Roth.

Acknowledgments: The project was approved by the Ethics Committee of the Economics Department at the University of Verona on May 8, 2023 (prot. 175542 - rep. 702/2023). Research funding from grant "RB2019 - Rif. Prot. RBVR198TZT" from the University of Verona and PRIN grant "Information Diffusion, Networks and Polarization (INFONET)" is gratefully acknowledged. We thank the Editor and three anonymous referees for a set of extremely helpful comments. We also thank Florian Zimmermann, Thomas Dohmen, Giovanni Facchini, Daniele Nosenzo, Luca Zarri, Maria Vittoria Levati, Alessandro Bucciol, and Steve Stillman and seminar participants in Aarhus, Bolzano, Lyon, Milan, Paris, Pisa, and Valencia for constructive comments. An earlier version of this paper has circulated with the title "News,

Journal of the European Economic Association 2026 00(0):1–32
https://doi.org/10.1093/jeea/jvag016

1. Introduction

How do people form their views on policy issues? The literature has documented various factors, notably related to factual knowledge and understanding of the issue, self-interest or sociotropic concerns, or partisanship (Stantcheva 2020, 2021, 2022). While these factors describe cold, slow cognitive processes, less is known about the role of hot visceral factors in shaping policy views. This question is important given how often emotions are used in politics to persuade voters, in particular in populist rhetoric (Gennaro and Ash 2022; Grosjean, Masera, and Yousaf 2023; Webster and Albertson 2022). Emotions are also prevalent in the news, particularly in the media coverage of polarized issues, such as immigration. In addition to factual information, the media often report sensational news stories, with, typically, emotional cues appealing to fear, anxiety, and other negative feelings.[1] As a result, news consumers are generally exposed to a mix of factual data and sensational stories, possibly influencing them both at a cognitive and affective level.

This paper examines the effect of sensational news and of the emotions they trigger on policy views. A simple conceptual framework, illustrated in Figure 1, can help clarify the goals and contribution of the paper. As proposed by Alesina, Miano, and Stantcheva (2020), the standard framework to think about how information affects policy views is shown on the left panel: Policy views are formed as functions of factual perceptions, that is, subjective beliefs about relevant statistical parameters such as, for example, the population share of immigrants or the share of national income going to the top 1% (Arrow B). These perceptions in turn depend on the information signals that people receive (Arrow A). To this usual framework, we add the influence of sensational news, which differs from the typical information signal in that it triggers an emotional reaction, while the former does not (or to a lesser extent). The first question we investigate is whether news-induced emotions affect policy views (Arrows C and D). The second question is whether emotions influence the way people respond to factual information. More specifically, we explore whether emotions influence (i) the learning of new facts, that is, belief updating (Arrow A), and (ii) the way in which belief updating translates into a change in policy views (Arrow B).

We address these questions by examining policy views on immigration. The interaction between emotions and beliefs is particularly relevant in the context of immigration given the high level of factual misperceptions (Alesina, Miano, and

Emotions, and Policy Views on Immigration". Murard is Research Affiliate at NOVA SBE. Murard, Quercia, and Tonini are Research Fellows at IZA. All mistakes remain our own.

E-mail: elena.manzoni@unibg.it (Manzoni); elie.murard@unitn.it (Murard); simone.quercia@univr.it (Quercia); sara.tonini@unibz.it (Tonini)

1. Figure A.1 in the Online Appendix A illustrates the headlines of some sensational stories about immigrants in the US, UK, French, and Italian news media.

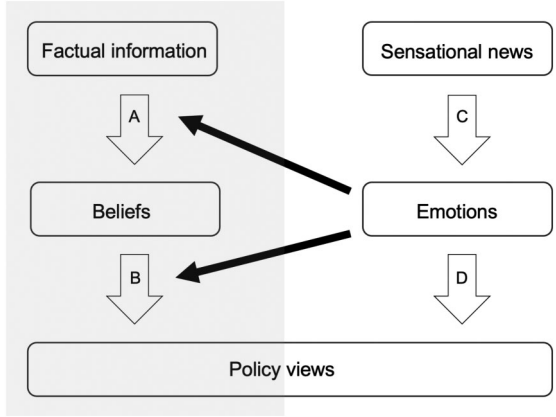


FIGURE 1. Emotions, beliefs, and policy views.

Stantcheva 2023), possibly contributing to the widespread opposition to immigration in the public opinion of receiving countries.

We conduct an online survey experiment in Italy with 12,000 adult participants. To estimate the causal influence of emotions on policy views, the experiment randomly exposes participants to sensational news stories about crimes perpetrated by immigrants. We focus on immigrant crime as it is the typical issue that the media cover with sensational stories appealing to readers' emotions.[2] Italy is no exception—to the contrary, Italian mass media display significant bias in the coverage of crime news—especially of crimes committed by immigrants—and exert a strong influence on political opinion.[3]

The key identification challenge of the experiment is that news stories about immigrant crime may not only induce emotions but also impact factual beliefs about immigrants. To disentangle the attitudinal effect of emotions from that of beliefs, we use two strategies. First, we expose participants to news stories reporting different types of crime: either a violent crime, that is, the rape or the murder of a woman, or a petty offense, that is, the theft of a woman's handbag. Given the different severity of the crime, we expect that these news stories trigger different emotional reactions.[4] Furthermore, as they all report an immigrant's crime, we expect these news stories to have a similar impact on beliefs about immigrants' criminality. Nonetheless, it could be that the news stories differentially affect beliefs about the *type* of crime that immigrants

2. See media communication analysis in Harris and Gruenewald (2020) and Haynes, Merolla, and Ramakrishnan (2016), among others.

3. See Barilari et al. (2025), Bove, Elia, and Ferraresi (2023), Mastrorocco and Minale (2018), and Orrù (2017) for media bias and its effects and Barone, D'Acunto, and Narciso (2015) and Durante, Pinotti, and Tesei (2019) for the influence of Italian mass media on people's views.

4. To trigger participants' emotions, we use two different news stories (rape or murder news)—instead of one—to make sure that the results are not driven by a "crime fixed effect".

tend to commit, which, in turn, may change policy views on immigration. To address this concern, our second strategy is to examine the effect of the news stories conditional on having accurate and relevant statistical information about immigration and about immigrant crimes. We thus randomly expose participants to statistical information, to each of the crime news stories, or to the combination of both. Once provided with the statistics, the news stories should not influence respondents' beliefs, as they do not bring any additional information other than the description of a specific realization of the statistical distribution of crimes. Conditional on having correct knowledge of the statistics, the news stories become uninformative from a quantitative point of view, which allows us to isolate the effect of their qualitative features, which is to trigger emotions. Furthermore, the information treatments allow us to answer our second research question, namely, to assess how news-induced emotions influence the way people process and respond to factual information.

Our experimental design comprises eight between-subjects conditions in a 4×2 design. In our first treatment dimension, we vary the type of article participants read. We use a neutral news story about a food festival as control and three crime news stories (rape, murder, and theft). For comparability, and to make the experiment more realistic, all news stories were selected from the mainstream Italian newspaper "La Repubblica" (without disclosing the name of the newspaper to participants). In our second treatment dimension, we vary whether participants receive statistical information along with the article. When providing statistical information, we randomize the order in which the statistics and the news article appear on the survey screen.[5] We measure prior and posterior beliefs by asking a series of questions about the same statistics provided in the information treatment, before and after the treatments, respectively. We also elicit emotions by asking participants how strongly they felt positive (joy and surprise) and negative (fear, anger, contempt, and disgust) emotions while reading the news article. Toward the end of the questionnaire, we measure attitudinal outcomes by asking participants' views on whether the number of immigrants arriving in Italy should be reduced or increased, their willingness to sign a petition to decrease or increase the number of residence permits for foreigners, and their views on whether immigration makes Italy a better or worse place to live in.

The results of the experiment are as follows. First, news stories that induce stronger negative emotions also trigger a stronger attitudinal response. While the highly emotional rape and murder news stories significantly increase the demand for anti-immigration policies compared to the control, the less emotional news of a petty theft has smaller or insignificant effects on attitudes. This is consistent with a causal influence of emotions on policy views (Arrow D), as we show that: (i) There is little difference in belief updating across the news stories, either in terms of perceived share of crime committed by immigrants, or in terms of beliefs about the relative frequency of rape, murder, and theft among immigrant offenses, and (ii) More emotional news stories have a stronger attitudinal impact, also conditional on providing statistical information that holds posterior beliefs constant across different news.

5. The statistical information had a clear indication of the source, namely, the Italian National Institute of Statistics (ISTAT).

Second, when provided with statistical information, participants correct their beliefs toward the truth, although learning is a little reduced when participants are emotionally triggered by the crime news stories. Hence, while they slightly disrupt it, emotions do not impede factual learning (Arrow A). In contrast, the exposure to sensational news strongly influences whether belief updating translates into a change in policy views (Arrow B). When presented in isolation, information significantly reduces anti-immigration views, as the statistics learned by the participants tend to contradict their prior beliefs, making them realize that the percentage of crime committed by immigrants is lower and that rape and murder are less frequent types of crime compared to what they initially thought.

However, when information is presented alongside emotional news, the emotional reaction trumps the effect of information, leading participants to adopt anti-immigration views as strongly as when exposed to emotional news alone. Hence, the negative effect of emotional news on attitudes remains unaffected by the provision of statistical information. These findings suggest that once negative emotions are triggered, having more accurate factual knowledge no longer matters for forming policy views on immigration.

Our paper contributes to four strands of literature. The first is the vast literature that documents the importance of emotions in influencing judgments, decisions, and choices.[6] Emotions can notably be understood as "visceral factors" directly influencing preferences and behaviors (Loewenstein 1996, 2000). For example, anger has been shown to cause destructive behaviors in the ultimatum game, and lower contributions in public good games (Drouvelis and Grosskopf 2016; Van Leeuwen et al. 2018); fear tends to increase risk aversion in financial decisions (Cohn et al. 2015; Guiso, Sapienza, and Zingales 2018), and emotional shocks can even influence court decisions (Eren and Mocan 2018). Emotions can also provide information about people's own tastes (e.g.,"How do I feel about this?"), that can be used to form evaluative judgment (Schwarz 2012). We contribute to this literature showing that the emotional reaction to sensational news can move respondents' views on immigration, independently of factual beliefs.[7]

Second, our paper contributes to the growing literature on information provision experiments (Haaland, Roth, and Wohlfart 2023). In particular, given the high level of factual misperceptions about immigration, there has been a growing interest in testing whether correcting people's perceptions could reduce anti-immigration views. Various interventions have been tested by providing survey participants with statistical information about either the size of the immigrant population (Alesina, Miano, and Stantcheva 2023; Grigorieff, Roth, and Ubfal 2020; Hopkins, Sides, and Citrin 2019), the labor market impact of immigration (Haaland and Roth 2020), or its economic

6. See Lerner et al. (2015); Rick and Loewenstein (2008).

7. Emotions are also increasingly studied in political psychology, and notably their role in the demand and supply of populism. Some work shows that populist rhetoric uses more appeals to negative emotions than non-populists, and also that anger and resentment are important determinants of populist voting (Ali, Desmet, and Wacziarg 2024; Altomonte, Gennaro, and Passarelli 2019; Webster 2020; Webster and Albertson 2022; Widmann 2021).

benefits for host societies (Cattaneo and Grieco 2021; Facchini, Margalit, and Nakata 2022; Lergetporer, Piopiunik, and Simon 2021). Some studies also examine whether fact-checking can counteract the effects of politicians' misleading statements about refugees (Barrera et al. 2020). While information is usually found to improve factual knowledge, results are mixed on whether belief updating leads to a change in political attitudes and behaviors. Policy views are sometimes found to be resistant to change in response to factual information. So far, the most common explanation of this phenomenon has been motivated reasoning, that is, the biased interpretation of new information in a way that aligns with prior attitudes and ideology (Zimmermann 2020). We add to this literature by uncovering the role of emotions as a new alternative explanation.

Third, our paper relates to a recent set of studies on the influence of news media on attitudes toward immigration (Benesch et al. 2019; Couttenier et al. 2024; Djourelova 2023; Keita, Renault, and Valette 2024; Schneider-Strawczynski and Valette 2025). In particular, media have been shown to influence people's views either by increasing the salience of the immigration issue (bringing people's attention to it) or by selecting the news event they cover, typically over-reporting negative news about immigrants. We instead provide evidence of a different persuasion mechanism based on emotional appeals. Furthermore, while these studies exploit observational data, we use a survey experiment, which allows us to abstract from the typical challenges of causal inference.

Finally, our paper echoes recent evidence that narratives and anecdotes may exert stronger influence on people's perceptions of outgroups compared to interventions providing hard statistical information (Alesina, Miano, and Stantcheva 2023; Bursztyn and Yang 2022). More generally, anecdotal stories can be easier to recall in memory than statistics because they provide contextual cues (Graeber, Roth, and Zimmermann 2024). We complement this evidence by showing that emotional news stories can exert a stronger influence on attitudes than statistical data (even when the story does not bring additional quantitative information). Emotions may therefore provide another explanation for the differential effects of stories compared to statistics.

We also acknowledge two closely related contemporaneous studies that appeared after our initial submission. Algan et al. (2025) document the recent rise of emotional content in media news and political speeches and show that emotional stimuli—particularly those eliciting anger—can influence policy preferences across a broad set of issues. Despite its wide scope, this study does not address (i) the role of emotions in information processing and belief updating, nor (ii) the relative importance of beliefs and emotions in shaping policy views. Taubinsky et al. (2024) examine the effect of household-level emotional events on inflation expectations, showing that beliefs are shaped through biased recall of positive or negative experiences depending on individuals' affective states. In contrast, we focus on the direct effect of emotions on beliefs rather than on recall-mediated channels and, crucially, we demonstrate that emotions can influence policy attitudes independently of beliefs.

The rest of the paper is structured as follows: Section 2 describes the experimental design and the data. Section 3 reports the experimental results and discusses the potential mechanisms underlying the observed evidence. Section 4 summarizes and concludes.

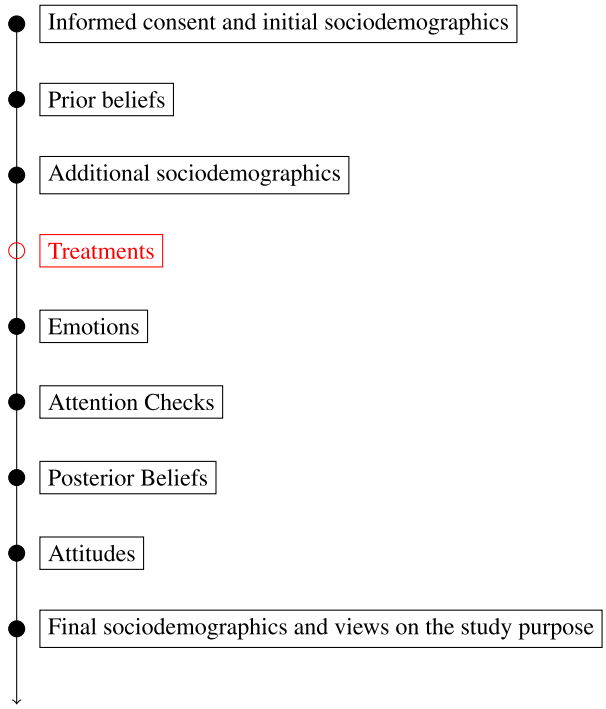


FIGURE 2. Structure of the survey experiment.

2. Experimental Design

In this section, we first describe the basic structure of the experiment (2.1) and our treatments (2.2), then report details about the preregistration, the main characteristics of our sample, and the outcome variables used for the empirical analysis (2.3).

2.1. Structure of the Survey Experiment

Upon clicking on the survey link, participants were redirected to a Qualtrics survey (an English translation of the survey is reported in Online Appendix B). The design of the survey is composed of several blocks that follow the order we summarize in Figure 2. We describe the blocks in detail below.

Informed Consent and Initial Sociodemographics. In the first block, participants are informed about the sensitive contents of the survey and asked whether they want to proceed further. Alongside, we elicit gender, age, and region of residence.

Prior Beliefs. In the second block, we elicit prior beliefs about a series of statistics about immigration pertaining to the year 2022. First, we ask the percentage of

foreigners in the population residing in Italy. Second, we ask them to estimate the percentage of foreigners among people reported to the judicial authority. Furthermore, we ask the percentage of (i) petty theft, (ii) murder, and (iii) sexual assault among crimes committed by foreigners. In these three cases, we also provide the corresponding percentages for natives as a benchmark. Participants answer these five questions using an open-ended format. These statistics are the ones that will be later presented to participants in our information treatments (see below).

Additional Sociodemographics. Survey participants are asked about the demographic composition of their household, how religious they are, and their political orientation on a spectrum from left to right (left, center-left, center, center-right, right). We elicit the latter before the treatments to be able to conduct heterogeneity analyses with a measure unaffected by the treatments. At the end of this section, we also include a favorite-color attention screener following Haaland, Roth, and Wohlfart (2023).

Treatments. Participants are presented with one of the four articles and/or statistics about immigration (see next subsection for details on the treatments).

Emotions. After the treatments, participants are asked to report their emotions about the article they read. We present participants with a list of seven emotions and ask them on a scale from 1 to 7 how strongly they felt each emotion while reading the article (Bosman and Van Winden 2002; Bosman, Sutter, and van Winden 2005). Following Ekman et al. (1999), we chose seven basic emotions: anger, contempt, disgust, fear, joy, sadness, and surprise. All emotions were presented on the same screen, and the order in which the emotions were presented was randomized across participants.

Attention Checks. In order to assess whether participants read the article carefully, we ask them whether they remembered the *topic* of the article (rape, murder, theft, culture, or other) and the *location* (north, center, or south of Italy). These variables are elicited using multiple-choice questions.

Posterior Beliefs. We ask again the same questions about immigration statistics to measure how the treatments have changed respondents' posterior beliefs.

Attitudes. In this part, we elicit attitudes toward migration using three questions. The first question asks whether the number of migrants arriving in Italy every year should be reduced a lot/reduced a bit/left unchanged/increased a bit/increased a lot. The second is taken from the European Social Survey and asks whether the arrival of immigrants from different countries has made Italy a better or a worse place to live on a scale from 0 to 10. Finally, we ask whether participants would like to sign a petition to the Italian Parliament. They could select one of the following three options: (a) I would like to sign a petition to increase the number of residence permits issued each

year to foreigners; (b) I would like to sign a petition to reduce the number of residence permits issued each year to foreigners; or (c) I am not willing to sign any petition.

Final Sociodemographics and Views on the Study Purpose. We include a set of additional sociodemographic questions, and, at the end of the survey, we include two questions to control for experimenter demand effect. We first ask respondents whether they thought about the research objective while answering the questionnaire. If yes, we then ask whether these objectives had any influence on the way they answered the questionnaire.

2.2. Treatments

Our treatments vary between subjects along two dimensions: (i) the topic of the article and (ii) whether participants are provided or not with statistical information. Table 1 summarizes the treatment conditions, which we describe in detail below.

TABLE 1. Treatment conditions.

	Neutral	Low emotions	High emotions	
No info	*Control*	*Theft news*	*Rape news*	*Murder news*
Info	*Info*	*Info + Theft news*	*Info + Rape news*	*Info + Murder news*

No Info Treatments. In the *No info* treatments, participants receive no statistical information, and are asked to read a short newspaper article. All articles are selected from the online version of a mainstream Italian newspaper ("La Repubblica"). Participants are only told that the articles are selected from an Italian newspaper without any mention of its name to avoid partisan associations. In *Control*, we select an article about a food festival in Italy. In *Theft news*, participants are asked to read an article about a petty theft of a woman's handbag committed by an immigrant. In *Rape news* and *Murder news*, participants read about a rape perpetrated by an immigrant against a young woman on her way to work, and a murder perpetrated by an immigrant against a woman in a bar, respectively. In all crime articles, the police eventually arrest the perpetrator. We included this feature to prevent participants from thinking perpetrators were mistakenly held responsible. Table 2 reports the English translation of the four articles.

Info Treatments. In all the *Info* treatments, in addition to the articles described above, participants were also presented with a series of statistical facts about immigration. Participants were informed that all data were taken from the Italian National Institute of Statistics (ISTAT) and refer to the year 2022. The order in which participants saw the news article and the statistics was randomized within each treatment. As mentioned above, the statistical information contains all the data that was previously asked in the prior beliefs block (and subsequently asked in the posterior beliefs block). Hence, we provided data on (i) the percentage of foreigners in the population residing in Italy, (ii)

TABLE 2. News articles: (a) control (b) theft (c) rape (d) murder.

(a) ***Organic food even during happy hours: Sana 2022, the International Organic Fair, teaches us how it's done.***

From September 8th to 11th in Bologna, the event dedicated to natural eating.

Six pavilions and three areas reserved for good food. There are also expert nutritionists to provide essential advice. Choosing organic for breakfast and during happy hours. In the first case, to make what is already considered an important meal for health even healthier, and in the second case, to positively enrich a habit often labeled as unhealthy. The proposal comes from the International Organic and Natural Exhibition, Sana 2022, organized by BolognaFiere in collaboration with AssoBio, FederBio, and Cosmetica Italia, scheduled at the Bologna exhibition center from September 8 to 11, 2022.

(b) ***Theft in Piazzale della Pace, a foreigner reported (to the police)***

On Monday evening in Piazzale della Pace, during a karaoke show, a woman was at risk of being robbed. Taking advantage of the confusion, a Moroccan boy born in 1987 approached a 59-year-old woman who was watching the show and had placed her bag on the grass not far from her. The young man grabbed the bag and fled, under the eyes of the victim and some onlookers who tried to chase him. In the meantime, a report was made to the emergency number 113, which triggered the alarm.

The foreigner, wearing dark jeans and a gray cap, had escaped into the alley that runs alongside the Chamber of Commerce to climb over the fence wall. He ventured into a poorly lit area where he was tracked down by patrol officers. The bag was returned to its rightful owner, while the young man was taken to the police headquarters.

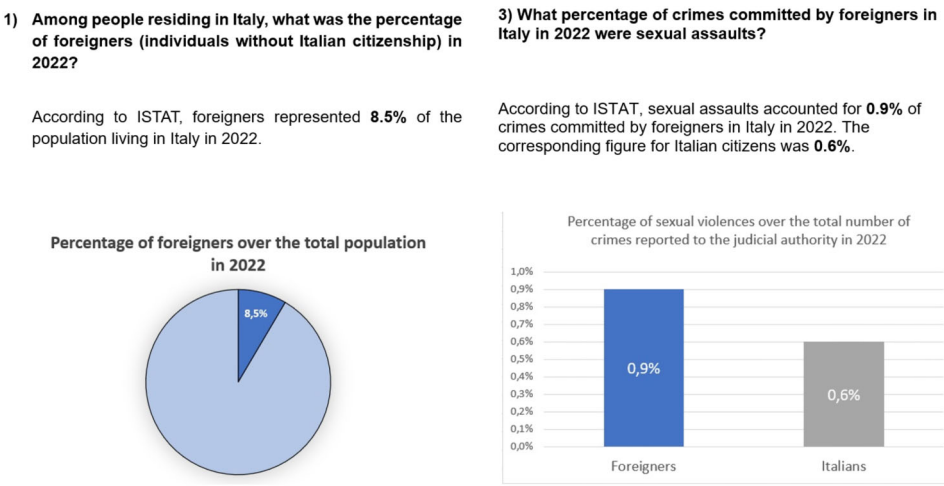
(c) ***Sexual assault on a woman on her way to work at the hospital, a man arrested thanks to DNA evidence.***

The rape occurred on the morning of August 9th in a construction area near San Raffaele. The victim filed a complaint, leading to an investigation by the Police Scientific Division, which eventually reconstructed the identity of the assailant, thanks in part to surveillance cameras.

The assault on the young woman took place on the street near the Cascina Gobba area, not far from the hospital. The arrested individual is a 31-year-old man. The rape occurred at 6 in the morning in a construction area located between the subway station and the hospital, which some employees use as a shortcut to arrive earlier. The man approached the woman from behind and dragged her into an internal ditch within the construction site, where he sexually assaulted her. The woman sought help from her colleagues in a state of shock, and the following day she went to Mangiagalli, where the assault was confirmed. [...] The arrested individual is a 31-year-old Egyptian who arrived in Lampedusa on a boat a few weeks ago. He was living with others in an apartment in the Dergano area.

(d) ***Femicide in Luserna: the killer waited until only women were in the bar — "He could have killed any one of us"***

He would occasionally stop by for a chat at the Primavera bar on Via Primo Maggio in Luserna San Giovanni, in the province of Turin. On Monday evening, he was there with a female friend, talking about everyday struggles. She had no idea that just hours later, a 34-year-old Moroccan man would stab her to death." He killed her because she was the closest, but he could have massacred any one of us," said the bar owner." They talked for a bit, then he started filming us. [...] Then he pulled out the knife. He even took a photo before running away," she added. The killer fled on foot, throwing the knife behind the cigarette vending machine at the tobacconist's, a few hundred meters down the road, not far from his home. He didn't hide—he kept wandering along Via Primo Maggio. When the police stopped him shortly after, he was still wearing a blood-stained shirt.



(a) Example of pie chart (b) Example of bar chart

FIGURE 3. Graphical presentation of statistical facts.

the percentage of foreigners among people reported to the judicial authority, and the percentage of (iii) petty theft, (iv) murder, (v) sexual assault among crimes committed by foreigners. To ease participants' understanding, we use graphical representations to present the statistical facts. For (i) and (ii), we presented the statistics using pie charts, while for (iii)–(v), we used bar charts. Figure 3 reports an example of the screens that participants saw in the experiment.

2.3. Preregistration, Sample, and Outcome Variables

The experiment was preregistered on AEA RCT Registry. The preregistration includes the experimental design and hypotheses, power calculation and determination of the sample, and a detailed pre-analysis plan. It can be accessed at https://www.socialscienceregistry.org/trials/16216.

Our respondents were recruited using Cint, a multinational market research platform. The survey was run in July 2025. Our estimation sample is composed of 12,000 Italians aged between 18 and 65 years old, and we implemented sampling quotas to ensure that the participants are representative of the adult 18–65 Italian population on gender, age, and geographical area.[8] Table A.1 in the Online Appendix A presents balance tests of each treatment against the control group, correcting for

8. Using data from the Italian population census, we imposed quotas on gender (49% male, 51% female), on age groups (26% 18–33, 34% 34–49, 40% 50–65) and on geographical area (46% North, 20% Center, 34% South + Islands).

multiple hypotheses testing. We find no significant differences in the variables reported in Online Appendix Table A.1.

Below, we describe the construction of our outcome variables as preregistered in the pre-analysis plan.

Policy Preferences and Attitudes toward Immigration. Online Appendix Figure A.2 shows the distribution of (i) policy preferences on immigration levels, (ii) willingness to sign a petition for increasing/decreasing the number of residence permits issued to foreigners, and (iii) views on whether immigration makes Italy a better or a worse place to live in, by treatment. As preregistered, our first outcome variable is constructed as a binary indicator that takes the value 1 if the respondent thinks that the number of immigrants should be reduced a lot and zero otherwise. This outcome measures the demand for anti-immigration policies aimed at drastically cutting immigration levels. Our second outcome variable is constructed as a binary indicator taking value 1 if the participant is willing to sign a petition to increase the number of residence permits and zero otherwise. Our third outcome variable is a continuous measure (scale from 0 to 10) of respondents' views about whether the arrival of people from different countries has made Italy a better or worse place to live (with 0 being a worse place, 5 being neutral, and 10 a better place).

Beliefs. Our main belief measure is the fraction of foreigners among individuals reported to the judicial authority. In some specifications, we will also use the belief about the overall proportion of foreigners in the population. In other cases, we use the specific beliefs on rape and theft to examine whether the news causes an update in the relevant crime domain.

Emotions. We use two measures of emotions. The first is constructed as the average of all the negative emotions (fear, anger, sadness, disgust, and contempt), with values between 1 and 7. In line with recent literature on emotions (Fiala and Noussair 2017; Noussair et al. 2024), we also construct a variable labeled "negative emotional valence" as the difference between negative emotions (fear, anger, sadness, disgust, ānd contempt) and positive ones (joy and surprise). The variable is standardized to take values between −1 and 1, with higher values representing a more negative emotional state, and 0 a perfect balance between positive and negative emotions.

3. Results

In this section, we first present our estimation strategy (3.1). We then focus on our main research questions by examining whether news-induced emotions affect attitudes toward immigration (3.2), and by analyzing the combined effect of statistical information and sensational news (3.3). Next, we present additional results, robustness checks, and heterogeneity analyses (3.4). Finally, we discuss how our results are related and inform the extant theoretical models (3.5).

3.1. Estimation

To investigate how the treatments affect respondents' beliefs, emotions, and policy views on immigration, we estimate the following equation using OLS:

$$Y_i = \alpha + \sum_{j=1}^{7} \gamma_j T_i^j + X_i' \beta + \varepsilon_i \quad (1)$$

where Y_i is the outcome for individual i; T_i^j ($j = 1, \ldots, 7$) are dummies indicating the seven treatments, with *Control* used as the reference group. X_i is a vector of controls including gender, age (dummies for the 18–24, 25–34, 25–44, 45–54, 55–65 age groups), respondents' and parental birthplace (foreign or native born), marital status (four categories), highest educational attainment (four categories), number of adults and under-18 household members, current occupation (five categories), family income (six brackets), area of residence (North, Center, or South Italy), and self-reported placement on the political scale (left, center-left, center, center-right, right). When examining the treatment impact on a posterior belief (or belief updating), we also include the prior belief in the regression controls. ε_i is an individual-specific error term. We use heteroscedasticity-robust standard errors for all specifications.

To facilitate the presentation of the estimation results, we first focus on the effects of the rape, murder, and theft news treatments in Section 3.2, and then turn to examining the effects of information provision, either in isolation or combined with the crime news in Section 3.3.

3.2. Effects of Rape, Murder, and Theft News

How do emotions triggered by sensational news influence attitudes toward immigration? In order to isolate the causal impact of emotions, we compare the effects of news stories with different emotional loads. The stories report three different types of crimes, namely, rape, murder, and theft, which are all committed by an immigrant against a woman. As the petty theft of a woman's handbag reported in the theft news is much less violent (in terms of physical and psychological harm) than the rape and murder, we expect the emotional reaction of respondents to be less intense. In contrast, as the informational signal conveyed by the three types of news is relatively similar, we expect that they affect factual beliefs in a similar way.

We provide evidence that the treatments work as intended. The left panel of Figure 4 shows the distribution of respondents' posterior beliefs about the share of immigrants among offenders, as elicited after the treatments. While beliefs are higher in the three crime news treatments relative to the control group, the shift is very similar between the rape, murder, and theft news. The right panel of Figure 4 shows the distribution of the emotional reaction to the crime news as measured with negative valence relative to control. All three crime news significantly increase respondents' negative emotional valence; the emotional reaction appears much stronger for the

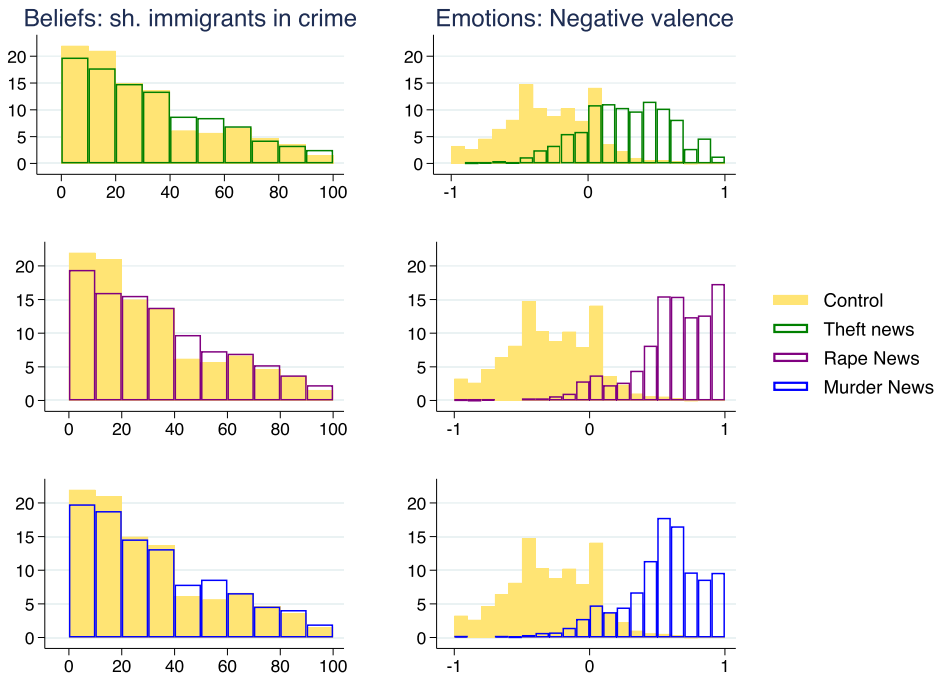


FIGURE 4. Posterior beliefs and emotions across treatments.

rape and murder news than for the theft news. Looking at the specific emotions that the crime news triggers, we find a general increase in all negative emotions, that is, anger, fear, sadness, contempt, and disgust (see Figure A.3 in the Online Appendix A), although less pronounced for the theft news.

Table 3 reports the OLS estimates of the effects of the crime news relative to the control group. Columns 1 and 2 confirm that, while *Theft news* increases the feeling of negative emotions, the emotional response it triggers is significantly less intense—about one third weaker—compared to *Rape news* and *Murder news*. Column 2 in particular shows that, relative to the control group, the intensity of negative emotions almost triples after reading the rape or murder news, while it only doubles for the theft news. In contrast, we find little difference in belief updating (i.e., posterior minus prior) between the different types of news (columns 3–7). When exposed to crime news, the perceived share of immigrants among offenders increases by 1.5–2.5 percentage points (column 4), with no significant differences between the theft news and the rape and murder news, as the differential effects reported at the bottom of Table 3 indicate. The same is true for the perceived share of immigrants in the population. Beliefs about the relative frequency of rape, murder, and theft among immigrant offenses adjust upward and to a similar extent irrespective of which type of crime respondents are exposed to. With one exception:

TABLE 3. Rape, murder, and theft news: effects on beliefs and emotions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Emotions		Updating of beliefs				
Dependent var.:	Negative emotional valence	Negative emotions (7-points scale)	Share of immigrants in population	Share of immigrants among offenders	Share rape among immigrant offenses	Share murder among immigrant offenses	Share theft among immigrant offenses
Rape news	0.899***	3.689***	0.990**	2.450***	2.081***	1.451***	1.988***
	(0.012)	(0.048)	(0.391)	(0.568)	(0.543)	(0.465)	(0.496)
Murder news	0.814***	3.483***	0.532	1.484***	1.435***	1.401***	1.200**
	(0.012)	(0.050)	(0.388)	(0.559)	(0.543)	(0.468)	(0.491)
Theft news	0.563***	1.927***	0.697*	1.740***	0.849	0.717	1.156**
	(0.012)	(0.052)	(0.394)	(0.565)	(0.546)	(0.448)	(0.507)
R^2	0.467	0.491	0.196	0.296	0.319	0.270	0.326
Observations	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Mean outcome in control group	−0.294	2.195	−1.321	−3.889	−1.262	0.143	−1.897
Differential effect:							
Rape vs. Theft news	0.335***	1.762***	0.294	0.710	1.232**	0.734	0.831
Murder vs. Theft news	0.251***	1.556***	−0.164	−0.256	0.586	0.684	0.043
Rape vs. Murder news	0.085***	0.206***	0.458	0.966*	0.646	0.050	0.788

Notes: The table shows the estimation results of equation (1), in which the regressors include the seven treatment variables: Rape, Murder, and Theft news, Info, and the combination of Info with each crime news. The regression controls include gender, age (dummies for the 18–24, 25–34, 25–44, 45–54, 55–65 age groups), respondents' and parental birthplace (foreign or native born), marital status (four categories), highest educational attainment (four categories), number of adult and under-18 household member, current occupation (five cat.), family income (six brackets), area of residence (Center, South, or North Italy), and self-reported political orientation (five categories). When the dependent variable is belief updating (columns 3–7), the controls also include the corresponding prior belief. Robust standard errors are in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

TABLE 4. Rape, murder, and theft news: effects on attitudes.

Dependent var.:	(1) Support for less immigration	(2) Sign pro-immigration petition	(3) Immigration makes Italy a better place to live (11pts scale)
Rape news	0.083***	−0.044***	−0.376***
	(0.016)	(0.013)	(0.090)
Murder news	0.074***	−0.034**	−0.292***
	(0.016)	(0.014)	(0.091)
Theft news	0.041**	−0.013	−0.119
	(0.016)	(0.014)	(0.089)
R^2	0.143	0.099	0.130
Observations	12,000	12,000	12,000
Mean outcome in control group	0.365	0.216	3.658
Differential effect:			
Rape vs. Theft news	0.042**	−0.030**	−0.257***
Murder vs. Theft news	0.033**	−0.021	−0.173**
Rape vs. Murder news	0.009	−0.010	−0.084

Notes: The table shows the estimation results of equation (1), in which the regressors include the seven treatment variables: Rape, Murder, and Theft news, Info, and the combination of Info with each crime news. The regression controls are the same as in Table 3. Robust standard errors are in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

when exposed to the rape news, the perceived share of rape increases significantly more, by an additional 1.2 percentage points, compared to the theft news treatment (column 5). Besides this exception, the difference in belief updating between the three types of crime is small (always < 1 ppt in absolute value) compared to the prior beliefs averages (standing at 15–25 ppt) and standard deviation (standing at 24–26 ppt).

We now turn to examine the effects of the crime news on attitudes toward immigration. Table 4 reports the OLS estimates, relative to the control group. The exposure to the rape and murder news significantly increases the support for less immigration by 8.3 and 7.4 percentage points, respectively. This represents a more than 20% increase with respect to the control group average. The rape and murder news also significantly decreases the willingness to sign a pro-immigration petition by 4.4 and 3.4 percentage points, and leads to a comparable reduction in pro-immigrant sentiment, as elicited with the question on whether immigrants contribute to making Italy a better place to live.

The attitudinal effects of *Theft news* are orders of magnitude smaller than the ones of *Rape news* and *Murder news*. While *Theft news* significantly increases the demand for less immigration, the effect is only half as large as that of rape and murder news. *Theft news* has no significant impact on the other two attitudinal outcomes. When testing the equality of regression coefficients, we can reject that *Theft news* has the same effect as *Rape news* for all three outcomes and that it has the same effect as *Murder news* for two outcomes.

TABLE 5. Attitudinal effects conditional on statistical information.

Dependent var.:	(1) Support for less immigration	(2) Sign pro-immigration petition	(3) Immigration makes Italy a better place to live (11pts scale)
Differential effect relative to Info + Theft news:			
Info + Rape news	0.048***	−0.036***	−0.307***
	(0.017)	(0.014)	(0.093)
Info + Murder news	0.056***	−0.025*	−0.205**
	(0.017)	(0.014)	(0.092)
R^2	0.143	0.099	0.130
Observations	12,000	12,000	12,000

Notes: The table shows the estimation results of a slightly modified version of equation (1). The reference group is the *Info + Theft news* treatment and the regressors include seven binary indicators: *Control*, *Rape news*, *Murder news*, *Theft news*, *Info*, *Info + Rape news*, and *Info + Murder news*. Apart from this, the regression controls are the same as in Table 3. Robust standard errors are in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

While the stronger attitudinal effect of more emotionally loaded news points to a possible causal role of emotions in shaping policy views, it could still be that (even small) differences in belief updating across treatments drive this result. To address this concern and better establish causality, we examine the effects of the crime news conditional on receiving relevant statistical information about immigration and immigrant crimes. Conditional on statistics, the crime news stories become uninformative from a quantitative point of view, which allows us to isolate the impact of the emotions they trigger. To confirm this, Online Appendix Table A.2 shows that, once statistical information is provided, there is no significant difference in belief updating across the three types of news and, in particular, no difference in beliefs about the relative frequency of the type of crime described in the news story. Moreover, the rape and murder news continue to trigger stronger emotions than the theft news, conditional on information.

Table 5 presents the effects on attitudes conditional on information, using *Info + Rape news* and *Info + Murder news* as regressors and *Info + Theft news* as reference group. The rape and murder news continue to have significantly stronger impacts than the theft news, for all three attitudinal outcomes. The differential effects (of rape/murder vs. theft news) conditional on information are of comparable size to the unconditional effects reported at the bottom of Table 4. Taken together, these results point to the important role of emotions in the formation of attitudes toward immigration, which leads to our first result.

RESULT 1. *Rape and murder news trigger a strongly negative emotional reaction and increase respondents' anti-immigration attitudes. The exposure to less emotionally loaded news about a petty theft has smaller or insignificant effects on attitudes. High-emotional news triggers a stronger attitudinal response, also conditional on providing statistical information that holds posterior beliefs constant across different news.*

3.3. The Combined Effects of Information and High-Emotion News

We now turn to examine how news-induced emotions influence how people process statistical information. We explore two questions: (i) Do emotions affect the learning of statistical information, that is, belief updating? (ii) Do emotions affect how (posterior) beliefs translate into attitudes toward immigration?

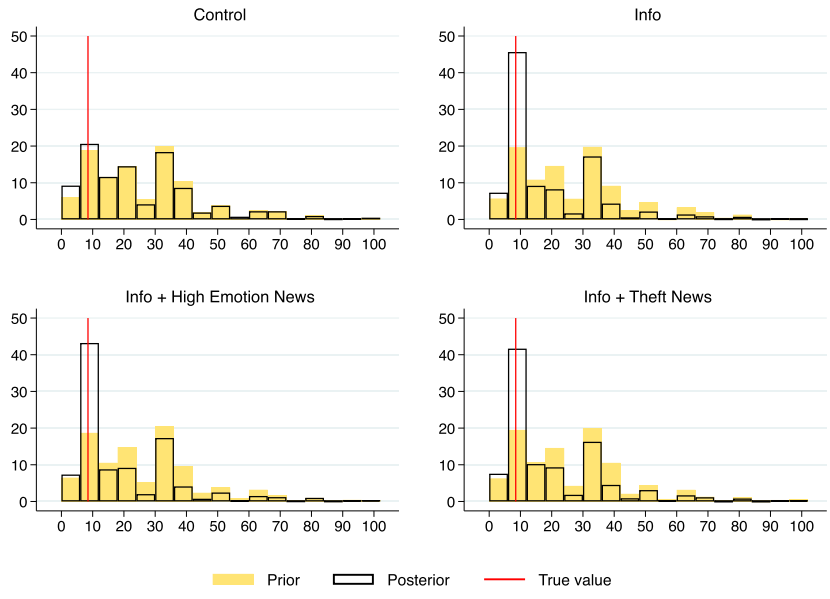
We address the first question by examining the treatment effects on beliefs, and the second question by looking at the effects on respondents' attitudes. For both, we compare the effects of the *Info* treatment (statistics plus a neutral article) with treatments that combine statistical information and crime news (*Info* + *Theft news*, *Info* + *Rape news*, *Info* + *Murder news*). To simplify the presentation of the results, and given that they have similar effects, we group the rape and murder news into an *Info* + *High-Emotion news* treatment (results are unchanged if we use the two treatments separately; we report these results in Online Appendix Tables A.4–A.6).

Figure 5 displays the distribution of prior and posterior beliefs about the share of immigrants in the population (Panel a) and the share of immigrants among offenders (Panel b), for the control group, the *Info* treatment, the *Info* + *High-Emotion news* treatment, and the *Info* + *Theft news* treatment. Figure 5 shows that respondents in the *Info* treatment revise their beliefs substantially toward the truth, as compared to the control group, for which posteriors remain fairly unchanged relative to priors. Importantly, respondents in the *Info* + *High-Emotion news* treatment also correct their beliefs to a similar extent as the ones in the *Info* treatment. This is also the case for the *Info* + *Theft news* treatment. Online Appendix Figures A.4–A.6 display the distribution of prior and posterior beliefs about the relative frequency of rape, murder, and theft among immigrant offenses, respectively. The improvement in factual knowledge also occurs for these beliefs, both in the *Info*, *Info* + *High-Emotion news*, and *Info* + *Theft news* treatments.

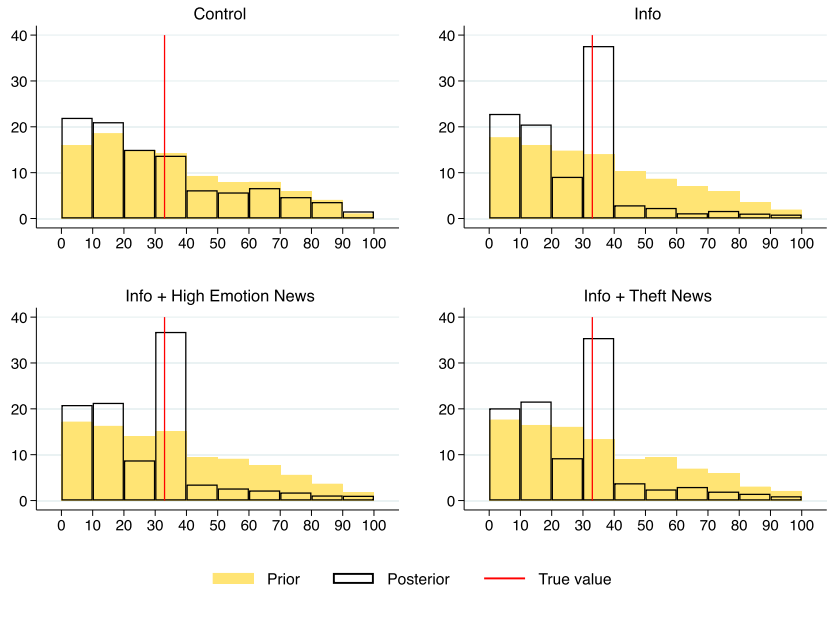
To quantify the extent to which the respondents update their beliefs toward the truth in the information treatments, we follow the literature reviewed in Haaland, Roth, and Wohlfart (2023) by calculating learning rates. To estimate such learning rates, we use the following specification:

$$\begin{aligned}\text{Updating}_i = {} & \alpha_1\,[\text{Info}] \times \text{Perc.-gap}_i + \alpha_2\,[\text{Info}] \\ & + \beta_1\,[\text{Info + High Emotion news}] \times \text{Perc.-gap}_i \\ & + \beta_2\,[\text{Info + High Emotion news}] \\ & + \gamma_1\,[\text{Info + Theft news}] \times \text{Perc.-gap}_i + \gamma_2\,[\text{Info + Theft news}] \\ & + \delta\ \text{Perc.-gap}_i + X_i'\lambda + \varepsilon_i \qquad (2)\end{aligned}$$

where $Updating_i$ is defined as the difference between the respondent's posterior and prior belief. The perception gap, $Perc.\text{-}gap_i$ is the difference between the true statistics and the respondent's prior belief. The key coefficients of interest α_1, β_1, γ_1 capture the learning rate, that is, the extent of belief updating toward the truth when provided



(a) Share of immigrants in the population



(b) Share of immigrants among offenders

FIGURE 5. Prior and posterior beliefs on statistical facts by treatment. This figure shows the histogram of the distribution of individual Prior (pre-treatment) and Posterior (post-treatment) beliefs by treatment. High-emotion news groups together the rape and murder news treatments.

with the information, on top of any updating that also happens for respondents in the control group. The latter is captured by δ, which can be different from zero, for example, because respondents think more carefully about the question once they are asked a second time. The α_2, β_2, γ_2 coefficients capture the average treatment effect on respondents' beliefs that does not depend on individual priors. In addition to including the same sociodemographic controls as equation (1), the vector X_i also includes the treatment variables *High-Emotion news* and *Theft news* and their interaction with $Perc.\text{-}gap_i$.

Table 6 presents the OLS estimates of the learning rates of the three information treatments for the five different beliefs. Estimates are between 0.2 and 0.5, in a range consistent with previous studies (see Table 1 in Haaland, Roth, and Wohlfart 2023). Column 1 shows that, for the belief about the share of immigrants in the population, the learning rate of the *Info* treatment is 0.334, implying that, on average, respondents with a prior belief one percentage point higher (lower) than the truth adjust downward (upward) their posterior by 0.334 percentage points, on top of any updating in the control group (which stands at 0.185). When, in addition to information, respondents are also exposed to the High-Emotion news, they continue to revise their knowledge of statistical facts, but to a lesser extent compared to the *Info* treatment. The learning rate in the *Info* + *High-Emotion news* is significantly lower, standing only at 0.229, that is, a third lower than in the *Info* treatment. For the other four beliefs, the learning rate of the *Info* + *High-Emotion news* is about 10%–15% lower than the one in the *Info* treatment. The learning rate of *Info* + *Theft news* follows the same pattern as *Info* + *High-Emotion news*, as we fail to reject the equality of learning rate between the two treatments. Overall, the evidence suggests that respondents correct their beliefs toward the truth in all three information treatments, but not to the same extent: When also exposed to highly emotional news, or even to less emotional ones (i.e., the theft news), their ability to learn statistical facts is slightly reduced. This leads to our second result:

RESULT 2. *When presented with statistical information, respondents tend to update their beliefs toward the truth irrespective of whether they are also exposed to emotional news stories. Nevertheless, learning rates are a little lower when respondents are emotionally triggered, either by highly emotional news (rape/murder news) or by less emotional one (theft news). While not impeding factual learning, emotional content can disrupt it slightly.*

Next, we explore the treatment effects on attitudes toward immigration. Table 7 presents the OLS estimates. When presented in isolation, information reduces anti-immigration attitudes. The *Info* treatment significantly decreases the support for less immigration by 4.4 ppts (column 1) and significantly increases the view that immigrants make Italy a better place to live (column 3). The attitudinal effect of *Info* likely results from belief updating, as the statistics learned by the respondents tend to contradict their prior beliefs: respondents realize that immigrants are fewer in the population, that the percentage of crime committed by immigrants is lower, and

TABLE 6. Learning rates: effects of information treatments on belief updating.

Dependent var.:	(1) Share of immigrants in population	(2) Share of immigrants among offenders	(3) Share of rape	(4) Share of murder among immigrant offenses	(5) Share of theft
Info* Perception gap	0.334***	0.572***	0.496***	0.512***	0.560***
	(0.044)	(0.033)	(0.037)	(0.039)	(0.033)
Info + High-Emotion news* Perception gap	0.229***	0.504***	0.449***	0.467***	0.473***
	(0.037)	(0.026)	(0.030)	(0.029)	(0.028)
Info + Theft news* Perception gap	0.254***	0.505***	0.481***	0.476***	0.459***
	(0.042)	(0.032)	(0.037)	(0.038)	(0.034)
Perception gap	0.183***	0.204***	0.172***	0.094***	0.166***
	(0.028)	(0.020)	(0.021)	(0.017)	(0.020)
R^2	0.236	0.397	0.426	0.395	0.450
Observations	12,000	12,000	12,000	12,000	12,000
Average outcome in control group	−1.321	−3.889	−1.262	0.143	−1.897
Differential learning rate between:					
Info + High Emotion vs. Info	−0.104**	−0.067**	−0.048	−0.045	−0.087***
Info + Theft vs. Info	−0.080*	−0.066*	−0.015	−0.036	−0.101***
Info + Theft vs. Info-High Emotion	−0.024	−0.001	−0.032	−0.009	0.014

Notes: The table shows the estimation results of equation (2). High-Emotion news groups together the rape and murder news treatments. The regression includes the five treatment variables *Info*, *Info* + *High-Emotion news*, *Info* + *Theft news*, *High-Emotion news* and *Theft news*, and each of their interaction with *Perception-gap*$_i$. The controls also include the same sociodemographics controls as in Table 3. Robust standard errors are in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

that rape and murder are a less frequent type of crime perpetrated by immigrants, compared to what they initially thought.[9] Conversely, *Info* has little effect on respondents' emotions, with an increase in negative emotions three times smaller compared to the crime news stories (theft or rape/murder news). Also, information provision barely alters respondents' emotional reaction to the crime news: the latter remains almost identical irrespective of whether respondents are also provided with statistical information (see Online Appendix Table A.3).[10]

When combined with the High-Emotion news, information no longer leads to an improvement in immigration attitudes. On the contrary, the *Info + High-Emotion news* treatment significantly exacerbates anti-immigration views (for all three attitudinal outcomes), despite respondents holding more correct factual beliefs. This indicates that the negative effect of the highly emotional news trumps the positive effect of statistical information. Moreover, the effects of *Info + High-Emotion news* are virtually identical to the ones of *High-Emotion news*, for all three attitudinal outcomes. This means that the emotions triggered by the High-Emotion news completely eliminate the belief-correcting impact of information. The pattern is similar for the attitudinal effect of theft news, which dominates and cancels the impact of information, with *Info + Theft news* having significantly more negative effects than *Info*, and *Info + Theft news* and *Theft news* having identical impacts.

These results have two implications. First, they show that, conditional on holding correct beliefs (i.e., in comparison with *Info*), the High-Emotion news still increases anti-immigration views, which provides additional evidence for a direct causal role of emotions in shaping policy views.[11] Second, they suggest that, once negative emotions are triggered by sensational news, having more correct factual beliefs no longer matters for forming policy views on immigration. Emotions thus make policy views more resistant to change in response to new information. Interestingly, this occurs not only for highly intense emotions triggered by news of violent crime (rape/murder), but also for less intense ones, as felt in reaction to news of minor crime (theft). This leads to our third result:

RESULT 3. *When presented in isolation, statistical information tends to reduce anti-immigration attitudes; when information is combined with emotional news, the impact of the latter dominates and participants increase their anti-immigration views, despite holding more correct factual beliefs.*

9. See Section 3.4 for results confirming this.

10. The difference in the emotional impact of *Info + High-Emotion news* and *High-Emotion news* is less than 8% of the effect size of *High-Emotion news* (for both emotion outcomes). The difference in the emotional impact of *Info + Theft news* and *Theft news* is less than 4% of the effect size of *Theft news*.

11. The small difference in belief updating between *Info + High-Emotion news* and *Info* is unlikely to explain the difference in attitudinal response. In fact, if this were the case, we would a fortiori expect that the large difference in belief between *High-Emotion news* and *Info + High-Emotion news* should translate into much more anti-immigration views in the *High-Emotion news* than in the *Info + High-Emotion news* treatment group. But this is not the case. Also, note that the emotional reaction to the High-Emotion news is almost the same between *High-Emotion news* and *Info + High-Emotion news*.

TABLE 7. Effects of treatments on policy preferences and attitudes toward immigration.

Dependent var.:	(1) Support for less immigration	(2) Sign pro-immigration petition	(3) Immigration makes Italy a better place to live (11pts scale)
Info	−0.044***	0.024	0.184**
	(0.017)	(0.015)	(0.091)
Info + High-Emotion news	0.085***	−0.043***	−0.348***
	(0.014)	(0.012)	(0.080)
High-Emotion news	0.078***	−0.039***	−0.334***
	(0.014)	(0.012)	(0.079)
Info + Theft news	0.033**	−0.013	−0.092
	(0.016)	(0.014)	(0.092)
Theft news	0.041**	−0.013	−0.119
	(0.016)	(0.014)	(0.089)
R^2	0.143	0.098	0.130
Observations	12,000	12,000	12,000
Mean outcome in control group	0.365	0.216	3.658
Differential effects between:			
Info + High-Emotion news vs. Info	0.130***	−0.067***	−0.532***
Info + High-Emotion news vs. High-Emotion news	0.007	−0.004	−0.014
Info + Theft news vs. Info	0.077***	−0.036**	−0.276***
Info + Theft news vs. Theft news	−0.008	0.001	0.027

Notes: The table shows the estimation results of a slightly modified version equation (1). High-emotion news groups together the rape and murder news treatments. The regression includes the five treatment variables *Info*, *Info + High-Emotion news*, *Info + Theft news*, *High-Emotion news*, and *Theft news*. The controls also include the same sociodemographics controls as in Table 3. Robust standard errors are in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

3.4. Robustness and Additional Results

Robustness. In Online Appendix Tables A.4–A.6, we examine the robustness of the main results to alternative sample and regression controls, as preregistered. We estimate the attitudinal effects of the seven treatment variables (each of the three crime news and their combination with the info treatment, plus the *Info* treatment), relative to the control group. Regarding the sample, we estimate OLS regressions either in the entire sample (12,000 observations, as in the baseline estimates) or in the sample restricted to individuals who both (i) correctly answered the favorite-color attention screener (98.2% of respondents) and (ii) correctly identified the topic of the news story when exposed to the rape, murder, or theft news (92.4% of respondents). This is meant to select only respondents who have read the news with sufficient attention. For both the full and restricted sample, we run four specifications starting with a regression without any controls and then progressively adding controls to the right-hand side. In particular, we add (i) age, sex, and educational attainment, (ii) other

sociodemographic characteristics (birthplace, marital status, occupation, etc.), and (iii) political orientation.

Overall, for the three attitudinal outcomes, we obtain estimates that are similar across specifications and samples. For opinions about whether immigration makes Italy a better place to live (Online Appendix Table A.6), the effects of the crime news (combined or not with *Info*) are somewhat larger in the restricted sample compared to the entire sample. Most importantly, we can almost always reject (at 10% or lower statistical significance) that the theft news has the same effect as the rape or murder news, either unconditionally or conditional on Info. We can also always reject (at 5% or lower statistical significance) that the combination of information and crime news has the same effect as the *Info* treatment. In contrast, we always fail to reject that the combination of information and crime news has the same effect as crime news presented in isolation. Overall, we conclude that our main findings, namely that (i) higher emotional news causes stronger attitudinal reaction and (ii) news-induced emotions dominate the impact of information, are robust to alternative regression controls and to restricting the sample to attentive respondents.

These conclusions are further reinforced by evidence from our earlier working paper (Manzoni et al. 2024), which analyzes a different dataset based on a smaller sample and a less comprehensive experimental design. Despite these limitations, that study documents similar effects of emotions on policy attitudes, lending additional support to the robustness and replicability of our findings.

Order Effects of News and Info. We test whether the order of exposure to information and emotional news influences respondents' belief updating, their emotional reaction, and their attitudinal response.[12] Online Appendix Table A.7 shows the heterogeneous impact of *Info* + *High-Emotion news* treatment depending on whether respondents were first shown the statistical information followed by the news, or vice versa. Panel A shows the differential effect on the learning rates of the statistics. For the belief about the share of the immigrants in the population and among offenders (columns 1 and 2), the learning rates are slightly lower (about 30% and 10% lower in terms of coefficient size) when the emotional news comes first, followed by the information, compared to the reverse order. This suggests that factual learning is disrupted slightly more when respondents are in an emotional state before receiving the information. Panel B shows the effects on emotions and attitudes. The emotional reaction to the news is a little less pronounced (about 8% lower in terms of coefficient size) when the news comes first. There is no significant difference in respondents' attitudinal response depending on the order of news and information.

Heterogeneity. In Online Appendix Figure A.7, we explore various dimensions of heterogeneity of treatment effects on the main attitudinal outcomes. Specifically, we examine heterogeneity in terms of gender, prior beliefs, political orientation, and

12. The analysis in this section is exploratory in nature and was not preregistered.

education. For each of these variables, we estimate a separate regression and report the coefficients of the treatment effect fully interacted with each category of the variable. To simplify the analysis, we use as a dependent variable an index of attitudes toward immigration, constructed as a principal component analysis (PCA) of the three attitudinal outcomes (support for less immigration, pro-immigrant petition, and opinion as to whether immigration makes Italy a better place to live).

Panel A of Online Appendix Figure A.7 shows the heterogeneous effects in terms of gender. While significantly negative for both genders, the attitudinal effect of the High-Emotion news (combined or not with Info) is significantly stronger for women, possibly because they are of the same gender as the victim reported in the rape news and murder news. Panel B examines the heterogeneity of the treatment effects depending on whether the respondent's prior belief overestimates or underestimates the share of crime committed by immigrants. We find that the *Info* treatment reduces anti-immigration attitudes to a greater extent for respondents with overestimated priors, as it makes them realize that immigrants' criminality is lower than what they initially thought. In contrast, *Info* has no significant impact for respondents with underestimated priors. Importantly, the *Info* + *High-Emotion News* and *High-Emotion News* treatments have significantly negative and similar effects on attitudes for respondents with overestimated priors. This implies that emotions dominate the belief-correcting effect of information, even for individuals who are the most positively impacted by information. Interestingly, the High-Emotion news has no significant heterogeneous effects between individuals with right-wing and left-wing views (Panel C), which suggests that emotional news does not act as a polarizing force. The *Info* treatment has significantly more positive effects for right-wing individuals, consistent with the fact that they have more biased prior beliefs compared to left-wing individuals. Finally, we find no significant treatment heterogeneity in terms of education, as Panel D shows.

Experimenter Demand Effects. A potential concern with our results is that treatment effects could be biased due to experimenter demand effects (Zizzo 2010). While recent evidence suggests that this bias may not be quantitatively important (De Quidt, Haushofer, and Roth 2018; Mummolo and Peterson 2019), we take additional steps to address this concern. Following Haaland, Roth, and Wohlfart (2023), we measure respondents' beliefs about the study purpose with an open-ended question at the very end of the questionnaire, and ask respondents whether they thought about it while answering the survey. A total of 48% of respondents either could not identify or did not think about the study purpose. If experimenter demand effects were driving the results, we would expect the attitudinal effects of the treatments to be weaker for these respondents, that is, those who did not know the intent of the study or were not thinking about it during the survey. In Online Appendix Table A.8, we test whether the treatment effects differ between respondents who had the study purpose in mind and those who did not. Panel A shows that there are no statistically significant differences in the treatment effects between the two groups of respondents. For all three attitudinal outcomes, we cannot reject the test of joint nullity of the interacted coefficients (treatments × study purpose not in mind). For respondents who thought

about the study purpose, we also asked whether it had any influence on the way they answered the survey. A total of 8% of respondents said it had some influence. In Panel B of Online Appendix Table A.8, we show that our results are robust to the exclusion of these respondents from the estimation sample.

Additional evidence that experimenter demand effects seem unlikely to drive our results comes from the fact that higher emotional news (rape/murder news) have stronger impacts on attitudes than less emotional ones (theft news). Given that the two types of news stories report a crime perpetrated by an immigrant, we would expect experimenter demand effects to influence answers to attitudinal questions in a similar way between the two treatment groups.

3.5. Discussion

In this section, we discuss how our Results 1–3 can be integrated within existing theoretical accounts in psychology and economics, and we outline ways in which our findings may inform future theoretical developments.

Result 1 - The Role of Emotions in Decision Making. We show that exposure to highly emotional news (rape, murder) worsens attitudes toward immigrants, while less emotional news (about a petty theft) has a smaller or no impact. This differential effect persists when respondents are provided with statistical information. This finding aligns with research showing that immediate emotional states—experienced at the moment a judgment is made—can directly shape decision making (Lerner et al. 2015; Loewenstein 1996; Rick and Loewenstein 2008).

Two mechanisms may explain how immediate emotions influence behavior in our experiment. The first concerns risk perception under uncertainty: emotional arousal alters how people assess potential harms. Johnson et al. (1993), for example, show that individuals assign a higher value to insurance against emotionally vivid risks (e.g., terrorism) even when probabilities are equal or lower than for more general risks. Our results suggest a similar affective amplification of perceived threat. This is consistent with models linking fear to heightened risk aversion (Andersson 2022).

The second channel concerns how emotions shape social or belief-dependent preferences. People have been shown to be more generous toward identifiable victims compared to statistical ones and, conversely, more punitive toward identified wrongdoers than toward unidentified ones, with both effects driven by emotional reactions (Small and Loewenstein 2003, 2005). To account for this, Loewenstein, O'Donoghue, and Bhatia (2015) propose a dual-process model in which rapid, affect-driven appraisals dominate slower deliberative evaluations in socially charged contexts. With respect to belief-dependent preferences, the model of anger by Battigalli, Dufwenberg, and Smith (2019) postulates that individuals who experience a gap between their expectation and the current situation (*frustration*) may punish others as a response to this frustration. In our context, emotional news about violent immigrant crimes may create such frustration, prompting punitive attitudes and worsening views about migrants.

Result 2 - The Role of Emotions in Belief Updating. We show that respondents provided with statistical information revise their beliefs toward the truth even when exposed to emotional news. However, learning is slightly disrupted when the statistics are paired with emotionally charged content.

This result aligns with research showing that emotions shape how information is encoded and retained in memory. Psychology studies find that emotional stimuli receive deeper processing and are remembered more vividly than neutral ones, making them more accessible during later judgments (Brosch et al. 2013). Economic research similarly argues that emotional arousal diverts cognitive resources from deliberative reasoning, thereby constraining and limiting analytical learning (Loewenstein 1996; Kaufman 1999). In our context, this would imply that highly emotional crime stories are more easily stored in memory than statistics, reducing accuracy in the recall of the latter. Consistent with this mechanism, we find a stronger disruption to Bayesian updating when emotional stories precede—rather than follow—the statistical information. This complements evidence from Graeber, Roth, and Zimmermann (2024), which shows that stories are more easily retained than statistics because they provide richer context and enhance associative memory (Kahana 2012).

Result 3 - The Combined Effect of Emotional News and Statistics on Policy Views. Result 3 indicates that, when statistical information is presented alongside highly emotional news, the emotional reaction overrides the effect of the statistics. As a result, respondents express anti-immigration views just as strongly as when no statistical data is provided. One possible explanation involves attentional processes: once emotionally triggered, respondents seem inattentive to statistical information when forming policy views, even though they retain it cognitively and update their beliefs accordingly.

Recent economic research conceptualizes attention as a scarce cognitive resource that shapes decision-making by determining which features of a choice environment are mentally represented and weighted in evaluation and decision processes (see Loewenstein and Wojtowicz 2025 for a review). Attentional processes can either be top-down—where individuals actively decide how to allocate attention, as in the model by Bolte and Raymond (2024)—or bottom-up, that is, triggered automatically by the properties of external stimuli, outside of volitional control, as in salience models (Bordalo, Gennaioli, and Shleifer 2012, 2013). In both frameworks, decision-makers behave as if they distort probabilities: Attention-driven weighting yields subjective probability transformations even when objective probabilities are fully understood. While not inconsistent with our results, neither approach can fully account for them.

Bolte and Raymond (2024) model emotions as a top-down mechanism: anticipating negative emotional reactions from certain outcomes prompts individuals to deliberately divert attention away from them, reducing their influence on decisions. While emotions may matter as anticipatory feelings, our findings suggest that they are also important as reactive feelings. Because deliberate attention allocation requires cognitive effort, emotions may lower this cost by providing internal sensory cues that automatically guide attention toward relevant information. Neuroscience research argues that rapid emotional responses can interrupt and redirect cognitive processing toward potentially high-priority concerns, such as imminent sources of danger

(Armony et al. 1995, 1997; De Becker 1997). In line with this, our findings point to the need for models of attention that account for emotions as reactive forces that redirect attention toward emotionally charged or threatening stimuli.

In Bordalo, Gennaioli, and Shleifer (2012, 2013), attention is driven by context-dependent contrast between attributes or outcomes of a choice. For example, in decisions under risk (Bordalo, Gennaioli, and Shleifer 2012), when choosing between different lotteries, decision makers tend to focus disproportionately on the states where the differences in utility between the lotteries are greatest, giving those states extra weight in their evaluation. A decision maker can thus be risk-seeking when a lottery's upside is salient and risk-averse when its downside is salient. This notion of salience is not well-suited to explain why, in our experiment, respondents express very different judgments on immigration between the *Info* and *Info + High-Emotion News* treatments. In both treatments, the objective probabilities of the various possible states of the world (rape, murder, theft, or no crime) are fixed, and so are the (dis)utilities of the different possible outcomes; therefore, the emotional news does not change salience as defined in Bordalo, Gennaioli, and Shleifer (2012, 2013). A potential link between salience-based models and our findings is provided by Bonomi, Gennaioli, and Tabellini (2021), who study the role of issue salience in shaping beliefs, policy views, and polarization. In their theoretical framework, political conflict increases the salience of specific social cleavages, leading individuals to adjust their beliefs toward the stereotypical positions of the group they identify with. Our results could be interpreted within this framework if emotions are viewed as an alternative mechanism through which group identities become salient or shift, thereby offering a channel through which emotional news may affect attitudes. However, a key implication of the model is that increased salience amplifies polarization: individuals who are initially pro-immigration (anti-immigration) should become more (less) favorable to immigration as the issue becomes salient. In contrast, we find that emotional news generates no significant heterogeneous effects by political affiliation (a proxy for group identity), suggesting that this explanation cannot fully account for our results.

4. Summary and Conclusions

Using a large-scale survey experiment, this paper investigates the combined effect of sensational news stories and the provision of statistical information. We find evidence that the emotional reaction to news of violent immigrant crime moves policy views, with a significant increase in anti-immigration attitudes. Providing statistical information tends to correct factual beliefs, irrespective of whether participants are also exposed to emotional news. While the exposure to emotional news has little influence on factual learning, it strongly determines whether belief updating translates into change in policy views. When presented in isolation, information significantly reduces anti-immigration views, as it makes participants realize that immigrants' propensity to commit crime (in particular, violent crime) is lower than what they initially thought. Yet, when information is combined with emotional news, the

emotional reaction to the news dominates and even eliminates the beliefs-correcting effect of information: participants increase their anti-immigration views to the same extent as when exposed to the emotional news only.

Although we focus on attitudes toward immigration to test our hypotheses, we view our findings as a proof of concept with broader implications for both (i) the formation of policy preferences and (ii) the interplay between beliefs, emotions, and preferences. With respect to policy attitudes, recent evidence indicates that emotions can indeed shape views on diverse issues such as climate change, taxation, etc. (Algan et al. 2025). With respect to information processing, our results provide novel evidence on how individuals react to informative versus emotional content. First, we document that Bayesian updating can be disrupted when people are emotionally triggered, thereby limiting the scope for rational learning. This is consistent with prior work showing belief perseverance in clinical contexts following emotionally salient feedback (Bottemanne et al. 2025), and with evidence from financial decision-making, where fear or euphoria can disrupt rational assessment of risks and probabilities (Cohn et al. 2015). Second, the finding that, once in an emotional state, statistics become irrelevant for forming policy views sheds light on the conditions under which beliefs matter for judgments and decisions. While earlier research highlights cognitive uncertainty as one reason individuals may fail to act on their beliefs (Yang 2023), our results suggest that emotional responses constitute an additional mechanism through which beliefs lose influence over decision-making.

Finally, the result that emotions may trump cognition in the formation of policy views has also important policy implications. First, news media should be aware that reporting facts and statistics can correct people's factual beliefs but may not move their policy views if sensational stories are reported alongside them. Second, in the political arena, populist rhetoric appealing to emotions is often responded to with factual and rational arguments. Yet, relying only on voters' cognition might not be the best strategy. How to counteract the effects of emotional communication is an important question for future research.

References

Alesina, Alberto, Armando Miano, and Stefanie Stantcheva (2020). "The Polarization of Reality." *AEA Papers and Proceedings*, 110, 324–328.

Alesina, Alberto, Armando Miano, and Stefanie Stantcheva (2023). "Immigration and Redistribution." *The Review of Economic Studies*, 90, 1–39.

Algan, Yann, Eva Davoine, Thomas Renault, and Stefanie Stantcheva (2025). "Emotions and Policy Views." *Harvard University working paper*.

Ali, Omer, Klaus Desmet, and Romain Wacziarg (2024). "Does Anger Drive Populism?" *Economics Bulletin*, 44, 1513–1527.

Altomonte, Carlo, Gloria Gennaro, and Francesco Passarelli (2019). "Collective Emotions and Protest Vote." *BAFFI CAREFIN Centre Research Paper No. 2019-107*.

Andersson, Lina (2022). "Fear and Economic Behavior." Working Papers in Economics No. 819, University of Gothenburg.

Armony, Jorge L., David Servan-Schreiber, Jonathan D. Cohen, and Joseph E. LeDoux (1995). "An Anatomically Constrained Neural Network Model of Fear Conditioning." *Behavioral Neuroscience*, 109, 246.

Armony, Jorge L., David Servan-Schreiber, Jonathan D. Cohen, and Joseph E. LeDoux (1997). "Computational Modeling of Emotion: Explorations through the Anatomy and Physiology of Fear Conditioning." *Trends in Cognitive Sciences*, 1, 28–34.

Barilari, Francesco, Davide Bellucci, Pierluigi Conzo, and Roberto Zotti (2025). "The Political Effects of (Mis)Perceived Immigration." *Journal of Economic Geography*, 25, 585–605.

Barone, Guglielmo, Francesco D'Acunto, and Gaia Narciso (2015). "Telecracy: Testing for Channels of Persuasion." *American Economic Journal: Economic Policy*, 7, 30–60.

Barrera, Oscar, Sergei Guriev, Emeric Henry, and Ekaterina Zhuravskaya (2020). "Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics." *Journal of Public Economics*, 182, 104123.

Battigalli, Pierpaolo, Martin Dufwenberg, and Alec Smith (2019). "Frustration, Aggression, and Anger in Leader-Follower Games." *Games and Economic Behavior*, 117, 15–39.

Benesch, Christine, Simon Loretz, David Stadelmann, and Tobias Thomas (2019). "Media Coverage and Immigration Worries: Econometric Evidence." *Journal of Economic Behavior & Organization*, 160, 52–67.

Bolte, Lukas and Collin Raymond (2024). "Emotional Inattention." Available at SSRN: https://ssrn.com/abstract=4776766.

Bonomi, Giampaolo, Nicola Gennaioli, and Guido Tabellini (2021). "Identity, Beliefs, and Political Conflict." *The Quarterly Journal of Economics*, 136, 2371–2411.

Bordalo, Pedro, Nicola Gennaioli, and Andrei Shleifer (2012). "Salience Theory of Choice under Risk." *The Quarterly Journal of Economics*, 127, 1243–1285.

Bordalo, Pedro, Nicola Gennaioli, and Andrei Shleifer (2013). "Salience and Consumer Choice." *Journal of Political Economy*, 121, 803–843.

Bosman, Ronald, Matthias Sutter, and Frans van Winden (2005). "The Impact of Real Effort and Emotions in the Power-To-Take Game." *Journal of Economic Psychology*, 26, 407–429.

Bosman, Ronald and Frans Van Winden (2002). "Emotional Hazard in a Power-to-Take Experiment." *The Economic Journal*, 112, 147–169.

Bottemanne, Hugo, Solène Frileux, Caroline Sevoz-Couche, Yann Pelloux, Romain Colle, and Emmanuelle Corruble (2025). "How Mood Shapes Belief Updating Bias in Depression." *Cognitive, Affective, & Behavioral Neuroscience*, 25, 889–903.

Bove, Vincenzo, Leandro Elia, and Massimiliano Ferraresi (2023). "Immigration, Fear of Crime, and Public Spending on Security." *The Journal of Law, Economics, and Organization*, 39, 235–280.

Brosch, Tobias, Klaus Scherer, Didier Grandjean, and David Sander (2013). "The Impact of Emotion on Perception, Attention, Memory, and Decision-Making." *Swiss Medical Weekly*, 143, w13786–w13786.

Bursztyn, Leonardo and David Y. Yang (2022). "Misperceptions about Others." *Annual Review of Economics*, 14, 425–452.

Cattaneo, Cristina and Daniela Grieco (2021). "Turning Opposition into Support to Immigration: The Role of Narratives." *Journal of Economic Behavior & Organization*, 190, 785–801.

Cohn, Alain, Jan Engelmann, Ernst Fehr, and Michel André Maréchal (2015). "Evidence for Countercyclical Risk Aversion: An Experiment with Financial Professionals." *American Economic Review*, 105, 860–885.

Couttenier, Mathieu, Sophie Hatte, Mathias Thoenig, and Stephanos Vlachos (2024). "Anti-Muslim Voting and Media Coverage of Immigrant Crimes." *The Review of Economics and Statistics*, 106 576–585.

De Becker, Gavin (1997). *The Gift of Fear*. Dell Publishing0.

De Quidt, Jonathan, Johannes Haushofer, and Christopher Roth (2018). "Measuring and Bounding Experimenter Demand." *American Economic Review*, 108(11), 3266–3302.

Djourelova, Milena (2023). "Persuasion Through Slanted Language: Evidence from the Media Coverage of Immigration." *American Economic Review*, 113(3), 800–835.

Drouvelis, Michalis and Brit Grosskopf (2016). "The Effects of Induced Emotions on Pro-Social Behaviour." *Journal of Public Economics*, 134, 1–8.
Durante, Ruben, Paolo Pinotti, and Andrea Tesei (2019). "The Political Legacy of Entertainment TV." *American Economic Review*, 109(7), 2497–2530.
Ekman, Paul et al. (1999). "Basic Emotions." *Handbook of Cognition and Emotion*, Tim Dalgleish and Mick Power, Vol. 98, John Wiley & Sons, p. 16.
Eren, Ozkan and Naci Mocan (2018). "Emotional Judges and Unlucky Juveniles." *American Economic Journal: Applied Economics*, 10(3), 171–205.
Facchini, Giovanni, Yotam Margalit, and Hiroyuki Nakata (2022). "Countering Public Opposition to Immigration: The Impact of Information Campaigns." *European Economic Review*, 141, 103959.
Fiala, Lenka and Charles N. Noussair (2017). "Charitable Giving, Emotions, and The Default Effect." *Economic Inquiry*, 55, 1792–1812.
Gennaro, Gloria and Elliott Ash (2022). "Emotion and Reason in Political Language." *The Economic Journal*, 132, 1037–1059.
Graeber, Thomas, Christopher Roth, and Florian Zimmermann (2024). "Stories, Statistics, and Memory." *The Quarterly Journal of Economics*, 139, 2181–2225.
Grigorieff, Alexis, Christopher Roth, and Diego Ubfal (2020). "Does Information Change Attitudes Toward Immigrants?" *Demography*, 57, 1117–1143.
Grosjean, Pauline, Federico Masera, and Hasin Yousaf (2023). "Inflammatory Political Campaigns and Racial Bias in Policing." *The Quarterly Journal of Economics*, 138, 413–463.
Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2018). "Time Varying Risk Aversion." *Journal of Financial Economics*, 128, 403–421.
Haaland, Ingar and Christopher Roth (2020). "Labor Market Concerns and Support for Immigration." *Journal of Public Economics*, 191, 104256.
Haaland, Ingar, Christopher Roth, and Johannes Wohlfart (2023). "Designing Information Provision Experiments." *Journal of Economic Literature*, 61, 3–40.
Harris, Casey T. and Jeff Gruenewald (2020). "News Media Trends in the Framing of Immigration and Crime, 1990–2013." *Social Problems*, 67, 452–470.
Haynes, Chris, Jennifer Merolla, and S. Karthick Ramakrishnan (2016). *Framing Immigrants: News Coverage, Public Opinion, and Policy*. Russell Sage Foundation.
Hopkins, Daniel J., John Sides, and Jack Citrin (2019). "The Muted Consequences of Correct Information about Immigration." *The Journal of Politics*, 81, 315–320.
Johnson, Eric J., John Hershey, Jacqueline Meszaros, and Howard Kunreuther (1993). "Framing, Probability Distortions, and Insurance Decisions." *Journal of Risk and Uncertainty*, 7, 35–51.
Kahana, Michael Jacob (2012). *Foundations of Human Memory*. OUP USA.
Kaufman, Bruce E. (1999). "Emotional Arousal as a Source of Bounded Rationality." *Journal of Economic Behavior & Organization*, 38, 135–144.
Keita, Sekou, Thomas Renault, and Jérôme Valette (2024). "The Usual Suspects: Offender Origin, Media Reporting and Natives' Attitudes towards Immigration." *The Economic Journal*, 134, 322–362.
Lergetporer, Philipp, Marc Piopiunik, and Lisa Simon (2021). "Does the Education Level of Refugees Affect Natives' Attitudes?" *European Economic Review*, 134, 103710.
Lerner, Jennifer S., Ye Li, Piercarlo Valdesolo, and Karim S. Kassam (2015). "Emotion and Decision Making." *Annual Review of Psychology*, 66, 799–823.
Loewenstein, George (1996). "Out of Control: Visceral Influences on Behavior." *Organizational Behavior and Human Decision Processes*, 65, 272–292.
Loewenstein, George (2000). "Emotions in Economic Theory and Economic Behavior." *American Economic Review*, 90(2), 426–432.
Loewenstein, George, Ted O'Donoghue, and Sudeep Bhatia (2015). "Modeling the Interplay between Affect and Deliberation." *Decision*, 2, 55.
Loewenstein, George and Zachary Wojtowicz (2025). "The Economics of Attention." *Journal of Economic Literature*, 63, 1038–1089.
Manzoni, Elena, Elie Murard, Simone Quercia, and Sara Tonini (2024). "News, Emotions, and Policy Views on Immigration." Working Paper No. 17017, Institute of Labor Economics (IZA).

Mastrorocco, Nicola and Luigi Minale (2018). "News Media and Crime Perceptions: Evidence from a Natural Experiment." *Journal of Public Economics*, 165, 230–255.
Mummolo, Jonathan and Erik Peterson (2019). "Demand Effects in Survey Experiments: An Empirical Assessment." *American Political Science Review*, 113, 517–529.
Noussair, Charles N., Steven Tucker, Yilong Xu, and Adriana Breaban (2024). "The Role of Emotions in Public Goods Games with and without Punishment Opportunities." *Journal of Economic Behavior & Organization*, 217, 631–646.
Orrù, Paolo (2017). "Il Discorso Sulle Migrazioni Nell'Italia Contemporanea." *Un'analisi Linguistico-Discorsiva Sulla Stampa (200-2010)*. Franco Angeli.
Rick, Scott and George Loewenstein (2008). "The Role of motion in Economic Behavior." *Handbook of Emotions*, edited by Lisa Feldman Barrett, Michael Lewis,, and Jeannette M. Haviland-Jones, Vol. 3. Guilford Publications, pp. 138–158.
Schneider-Strawczynski, Sarah and Jérôme Valette (2025). "Media Coverage of Immigration and the Polarization of Attitudes." *American Economic Journal: Applied Economics*, 17(1), 337–368.
Schwarz, Norbert (2012). "Feelings-as-Information Theory." *Handbook of Theories of Social Psychology*, 1, 289–308.
Small, Deborah A. and George Loewenstein (2003). "Helping a Victim or Helping the Victim: Altruism and Identifiability." *Journal of Risk and Uncertainty*, 26, 5–16.
Small, Deborah A. and George Loewenstein (2005). "The Devil You Know: The Effects of Identifiability on Punishment." *Journal of Behavioral Decision Making*, 18, 311–318.
Stantcheva, Stefanie (2020). "Understanding Economic Policies: What Do People Know and Learn." Working paper, Harvard University, pp. 2309–2369.
Stantcheva, Stefanie (2021). "Understanding Tax Policy: How Do People Reason?" *The Quarterly Journal of Economics*, 136, 2309–2369.
Stantcheva, Stefanie (2022). "Understanding of trade." Tech. rep., National Bureau of Economic Research.
Taubinsky, Dmitry, Luigi Butera, Matteo Saccarola, and Chen Lian (2024). "Beliefs About the Economy are Excessively Sensitive To Household-Level Shocks: Evidence from Linked Survey and Administrative Data." Tech. rep., National Bureau of Economic Research.
Van Leeuwen, Boris, Charles N. Noussair, Theo Offerman, Sigrid Suetens, Matthijs Van Veelen, and Jeroen Van De Ven (2018). "Predictably Angry—Facial Cues Provide a Credible Signal of Destructive Behavior." *Management Science*, 64, 3352–3364.
Webster, Steven W. (2020). *American Rage: How Anger Shapes Our Politics*. Cambridge University Press.
Webster, Steven W. and Bethany Albertson (2022). "Emotion and Politics: Noncognitive Psychological Biases in Public Opinion." *Annual Review of Political Science*, 25, 401–418.
Widmann, Tobias (2021). "How Emotional are Populists Really? Factors Explaining Emotional Appeals in the Communication of Political Parties." *Political Psychology*, 42, 163–181.
Yang, Jeffrey (2023). "On the Decision-Relevance of Subjective Beliefs." Available at SSRN: https://ssrn.com/abstract=4425080.
Zimmermann, Florian (2020). "The Dynamics of Motivated Beliefs." *American Economic Review*, 110(2), 337–61.
Zizzo, Daniel John (2010). "Experimenter Demand Effects in Economic Experiments." *Experimental Economics*, 13, 75–98.

Supplementary Data

Supplementary data are available at *JEEA* online.

Journal of the European Economic Association 2026 00(0):1–32
https://doi.org/10.1093/jeea/jvag016