

# Cognitive, Attitudinal, and Emotional Effects of News Frame and Group Cues, on Processing News About Immigration

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**Abstract.** This study aimed to contribute to the understanding of the mechanisms explaining the so-called framing effect. Experimental research ( $N = 355$ ) was carried out with a  $2 \times 2$  between-subjects factor design in which the news frame and group cues were manipulated in a news story on the consequences of the increase in immigration in Spain, and their impact on cognitive, attitudinal, and emotional variables was assessed. The results show that the type of news frame stressed in the report exerted significant cognitive, attitudinal, and emotional effects. It was also found that the emotional impact aroused by the news frame was conditioned by the incidental presence of information regarding the national or geographic origin of the immigrants in question. These results are consistent with the hypotheses posed and partially support the argument that the framing effect is a process governed by heuristic processing.

**Keywords:** framing theory, framing effect, group cue, immigration, experimental research

## Introduction

One of the main challenges facing the European Union is the integration of the foreign population coming from other regions of the world and how to deal with the prejudice toward immigrants that hinders that process (e.g., Sniderman, Hagendoorn, & Prior, 2004). Spain in particular offers a clear example of this problem. On the one hand, it has gone from being a country of emigration to becoming a host country for immigrants, the current rate of immigration being 12.2% of the total population (Instituto Nacional de Estadística [Spanish National Institute of Statistics], INE, 2011). However, both the treatment given to the information on immigration in the Spanish mass media and the image of immigration held by public opinion are negative and highlight the relation between immigrants and different types of problems, in particular with the rise in crime. Previous studies (e.g., Brader, Valentino, & Suhay, 2008; Igartua & Cheng, 2009) have shown that the way in which immigration is focused on in the news influences the public's perception of immigration – that is, the opinions, beliefs, and attitudes of individuals. However, little empirical evidence exists as to the emotional impact of news frames in reporting on immigration. Moreover, one of the most urgent aspects in research on the framing effect is the analysis of the processes or mechanism that explains this effect. Previous research

into this topic has focused above all on concepts such as accessibility and applicability (Matthes, 2007). Recently, it has also been noted that the framing effect can be explained by the action of a heuristic-type processing (Igartua & Cheng, 2009); however, to date this idea has not been used to predict the effect aroused in the emotions experienced when reading or viewing a news story.

The experimental study presented here is meant to contribute to our knowledge of the explanatory processes of the framing effect by analyzing the interaction effects between news frames regarding immigration (what is immigration associated with?) and group cue (who is the protagonist of the information?) on cognitive, attitudinal, and also emotional variables. Indeed, there is already previous research as regards the effects of group or racial cues on the activation of stereotypes, especially in the United States, but much less research has been conducted into the interaction between news frames and group cues in Europe, and analysis of the interaction between news frames and group cues is considered to be of primary importance in research regarding the framing effect in the coming years (Shah, McLeod, Gotlieb, & Lee, 2009, p. 94). In relation to previous studies, the present research makes advances in our knowledge of how the focus of news stories on immigration and references to the national or geographic origin of their protagonists condition the way people feel. Secondly, an attempt is made

to replicate previous studies about the cognitive and attitudinal effects of news frames, all with a view to attaining a systematic explanation of the mechanisms underlying the framing effect as a process governed by heuristic-type processing.

## Framing Effect

Recent developments in research on the cognitive and attitudinal effects of the news posit that information presented by the media not only *set* the public agenda (salience or the perceived importance of social affairs), but also *dictate* to the public how to think about certain matters (e.g., de Vreese, Boomgaarden, & Semetko, 2011; Scheufele & Tewksbury, 2007). In this context, the concept of the news frame is particularly relevant. This refers to a process involving two operations: selecting and emphasizing words, expressions, and images to lend a point of view, focus, or angle to a piece of information (Scheufele, 1999, 2000). News frames can play different roles, acting as dependent or independent variables (Scheufele, 1999).

When understood as dependent variables, frames are contained within the news and are the result of production processes in the communication media. Research into news frames has been developed from different perspectives, the most fertile one being the analysis of the informational treatment of different social topics and objects (e.g., Matthes & Kohring, 2008; Semetko & Valkenburg, 2000). Studies on the treatment of immigration in the press and on television have shown that there is a tendency to link immigration with delinquency, crime, and other social problems, whereas information on the positive contributions of immigration to the receiving country is provided to a much lesser extent (e.g., d'Haenens & de Lange, 2001; Igartua, Muñiz, Otero, & de la Fuente, 2007; Kim, Carvalho, Davis, & Mullins, 2011; van Dijk, 1989; Van Gorp, 2005; Vliegenthart & Roggeband, 2007).

News frames can also be conceived as independent variables, that is, as properties of informational texts that condition the processes of news reception and impact. This line of research is linked to the so-called framing effect, which refers to two differentiated processes (Scheufele, 1999, 2000). The first (frame setting) refers to the fact that news frames induce cognitive channeling effects. Abundant empirical evidence shows that the type of frame used to put together a news piece has a significant impact on the cognitive responses of subjects (e.g., Igartua & Cheng, 2009; Price, Tewksbury, & Powers, 1997; Shen, 2004a; Valkenburg, Semetko, & de Vreese, 1999). Secondly, it has been verified that news frames affect attitudes, beliefs, and the level of cognitive complexity with which people think about social topics (e.g., Boyle et al., 2006; Iyengar, 1991; Keum et al., 2005; Shah, Kwak, Schmierbach, & Zubric, 2004). Moreover, Aday (2006) has established that news frames can influence our perception of the importance of social issues and not just their definition.

With regard to analysis of the framing effect and immigration, empirical evidence exists that demonstrates that the way in which immigration is treated in the news influences how people interpret that news and their subsequent attitudes (Brader et al., 2008; Cho, Gil de Zuniga, Shah, & McLeod, 2006; Domke, McCoy, & Torres, 1999; Igartua & Cheng, 2009). Domke et al. (1999) manipulated a newspaper article in which three political candidates expounded their points of view on immigration, creating two versions according to the type of dominant frame (economic consequences versus a moral approach). It was observed that the news frames about immigration not only channeled cognitive response (frame setting), but they also contributed indirectly to the forming of judgments on this topic. Similarly, Cho et al. (2006) observed that reading a news story describing Arab citizens as *immigrants* and *extremists* reinforced the association between a negative view of Arabs and rejection of immigration. Brader et al. (2008) observed that a news story focusing on the negative consequences of immigration, as opposed to a news story pointing out its positive aspects, stimulated more negative attitudes toward immigrants, stronger reactions of anxiety over the increase in immigration, and a deeper perception of threat. Finally, Igartua and Cheng (2009) observed that, in contrast to the economic contribution frame, the crime growth frame stimulated more negative cognitive responses toward immigration, increased the salience of immigration as a problem, generated a negative attitude toward immigration, and induced greater disagreement with positive beliefs about the consequences of immigration for the country. The results of these studies seem to conclude that the way that information on immigration is focused, directly and indirectly influences attitudes toward immigrants.

The great majority of studies on the framing effect have concentrated on determining the cognitive and attitudinal effects of news frames. For example, de Vreese et al. (2011) point out that “framing can help us to understand how citizens make sense of political, social, and economic issues” (p. 180). Certainly this type of study has contributed valuable knowledge about how news frames exert an influence upon what people *think* about political and other social issues. Nonetheless, “they have said little about whether news frames can influence what citizens *feel* about politics” (Gross & Brewer, 2007, p. 124). As Gross and Brewer recognize, this may be an important omission, given that: (a) emotions play a fundamental role in political processes, for example, by affecting the appraisal of candidates in an electoral confrontation (e.g., Conover & Feldman, 1986), and (b) news frames, by affecting accessibility to certain considerations of a topic, also influence the type of emotional response that a person can have when reading a news story, since emotions depend on cognitive appraisals of facts or situations (Frijda, 1986). It can therefore be expected that “frames may influence not only opinion but also the emotional responses that people report” (Gross & D’Ambrosio, 2004, p. 19). However, previous research studies regarding the effect of news frames on emotions have not been conclusive, observing that this effect is moderated by the predispositions of individuals, such as their prior opinions on the

topic addressed in the news story (Gross & Brewer, 2007) or their ideology (Gross & D'Ambrosio, 2004).

## Underlying Explanatory Mechanisms of the Framing Effect

One of the most important aspects of the research regarding the framing effect focuses on analyzing their explanatory mechanisms (Price & Tewksbury, 1997; Scheufele, 2000). Matthes (2007) points out that most theorizing on framing has developed from the concept of accessibility (memory-based model). However, the framing effect has also been linked to the applicability of the knowledge activated upon news receiving, that is, with the activation of trains of thought that spontaneously influence the forming of attitudes and beliefs (online model), thanks to the emphasis on certain attributes in the news story (Price & Tewksbury, 1997; Price, Tewksbury, & Powers, 1997). Despite this, debate regarding the explanatory processes of the framing effect is still open, and thus it is too early to determine whether it should be considered an effect that depends on "accessibility" or "applicability" of the knowledge activated during the news reception.

The thesis maintained in this study is that the framing effect may be governed by heuristic processing (Perse, 2001). From this rationale, it is hypothesized that when media consumers are not particularly motivated to process information (which could be the default position, given the low indices of information retention; Machill, Köhler, & Waldhauser, 2007), the presence of peripheral cues in a news message can condition cognitive responses and the attitudinal impact associated with the impact of news frames.

Perse (2001) argues that the elaboration likelihood model (ELM) could be conceived as a general model for understanding the impact of media messages. Thus, the effects of framing could be explained as result of peripheral route processing (Petty & Cacioppo, 1986). The ELM posits two different routes responsible for the change in attitudes: central route processing and peripheral route processing. Central route processing means that the receiver of the message tries to make a critical and exhaustive evaluation of it, establishing a relatively rational process, which is controlled, conscious, and focused on the adaptation of its arguments. Peripheral route processing, on the other hand, is superficial and automatic and based on peripheral cues (who says what, how it is said, etc.). In this context, heuristic processing (which operates through the peripheral route) refers to the application of simple rules for deciding about aspects that are not central to the message (e.g., "if the news story appears in a prestigious newspaper as opposed to the sensationalist press, the information is more likely to be true and to have been verified").

There is empirical evidence indicating that the framing effect occurs more easily among individuals with low political involvement, involving low issue importance, and also that people showing a strong adherence to a specific political

party are less affected by framing (Iyengar, 1991; Kinder & Sanders, 1990). Furthermore, it has been observed that the framing effect is moderated by individuals' previous level of knowledge (Shen, 2004a), the importance they assign to the issue (Lecheler, de Vreese, & Slothuus, 2009), and their political predisposition toward the issue in question (Keum et al., 2005). These results are convergent with the ELM model of Petty and Cacioppo (1986), since it is thought to be more difficult to persuade a person who is motivated or has the ability to process messages. Nonetheless, the usual context of news reception is more often than not presided over by a low level of capability and/or motivation, so peripheral route processing is what usually occurs, and that rests on the application of heuristics (Shen, 2004b).

The empirical research into the effects of racial or group cues in the news, on the activation of stereotypes is also relevant in this context (e.g., Brader et al., 2008; Dixon & Maddox, 2005; Domke, 2001; Gilliam, Iyengar, Simon, & Wright, 1996; Gorham, 2006; Igartua & Cheng, 2009; Peffley, Shields, & Williams, 1996). It was observed that manipulating the race of a suspect (African-American versus White) in the context of a news story on crime influences individuals' concern about crime and attributions about causality (Gilliam et al., 1996), elicits stereotypical knowledge associated with Black versus White criminal (Dixon & Maddox, 2005), biases the assessment made of the suspect (Peffley et al., 1996), and influences the type of language used to describe the criminal (Gorham, 2006). Domke (2001) verified that the presence of racial cues using stereotypical written expressions associated with African-Americans (e.g., inner-city, gangs, disadvantaged teenagers, crack cocaine, etc.), influenced the cognitive responses written by the subjects after reading a news story on crime and reinforced the association between a conservative political ideology and greater support for punitive measures to fight crime.

One peripheral cue in the context of news on immigration is the reference to the national or geographic origin of the immigrants (group cue) (Brader et al., 2008; Igartua & Cheng, 2009). In fact, it has been shown that in writing news about immigration, reference to the origin of the protagonists is quite common (van Dijk, 1989; Van Gorp, 2005). In a content analysis study on 458 news articles about immigration, 75.3% of them were found to have mentioned the national or geographic origin of the protagonists (Igartua et al., 2007). Moreover, in the Spanish context, the existence of greater prejudice toward immigrants from Morocco and greater acceptance of Latin Americans has been observed (Cea D'Ancona, 2004). Igartua and Cheng's (2009) findings showed that information with incidental depiction of immigrants whose national image or geographic origin (Moroccan versus Latin American) was held in poor esteem in Spanish public opinion, in news stories about the consequences of immigration for the country, reinforced negative attitudes and beliefs. Similarly, Brader et al. (2008) observed that a news story about the increase in immigration to the United States emphasizing the negative consequences (as opposed to the positive ones) stimulated more negative attitudes toward immigrants and greater anxiety if the origin of the immigrants was said to be Mexican rather than European.

In light of all this, and taking as a reference the research on the framing effect and the impact of peripheral cues in the news, an experiment was carried out that is presented here. The participants in the experiment were exposed to a news story providing information on the increase in immigration to Spain, with manipulation of the type of consequences emphasized (increase in crime versus economic contribution) and the origin of the immigrants in question (Moroccan versus Latin American). If the framing effect can be explained by the activation of heuristic processing, the presence of peripheral elements in a news story on immigration (reference to the origin of the immigrants) should modify the impact of the news frames. In this context, the following hypotheses were posed:

*Hypothesis 1:* Participants exposed to the news frame of economic contribution will generate more positive cognitive responses toward immigration, more cognitive responses focused on the frame of economic consequences, and fewer focused on the frame of delinquency than participants exposed to the news frame that associates immigration with crime. This result will be less pronounced when the immigrants in the news story are of Moroccan origin.

*Hypothesis 2:* The frame that refers to the economic contribution of immigrants, as opposed to the frame linking immigration to crime, will induce a lower perception of immigration as a problem, a more favorable opinion of immigration, and a higher degree of agreement with beliefs that relate immigration to the economic progress of the country. This outcome will be less pronounced when the immigrants in the news story are of Moroccan origin.

Finally, taking as a reference prior research into the effects of news frames on emotional response, it can be expected that the immigration frame of the news piece will affect the type of emotions experienced by the reader. Thus, a news piece focused on the negative consequences of immigration (e.g., one that links immigration to an increase in delinquency) will induce negative emotions such as anger, contempt, disgust, or fear (emotions associated with rejection of immigrants; Pettigrew & Meertens, 1995) to a greater extent than one linking immigration to positive consequences (such as the economic contribution of immigration to the country's progress), which in contrast will most likely induce more positive emotions such as happiness, interest, or surprise. Furthermore, if the framing effect can be explained by the activation of heuristic processing, the presence of peripheral elements in a news story on immigration (group cues) should modify the impact of the news frames on emotions.

*Hypothesis 3:* Participants exposed to a news story that links immigration to delinquency, as opposed to those exposed to a news story that emphasizes the

economic contribution of immigrants, will experience more negative emotions and fewer positive emotions during reading. This result will be more pronounced when the immigrants in the news story are of Moroccan origin.

The present study uses a methodology similar to that employed by Igartua and Cheng (2009), but introducing an improvement in the construction of the experimental news stories, since this aspect was one of the fundamental limitations of that study, as the authors themselves recognize in the Discussion section of their paper. In the study by Igartua and Cheng, a specific criminal incident was narrated in the news story with a delinquency frame: the murder of a young Spaniard at the hands of an immigrant. The news story with the positive economic consequences frame, however, did not offer any specific information; rather, it alluded in general to abstract matters linked to the positive effects of immigration. To address this problem (difference in vividness between the two frames) in the present study, all references to specific criminal incidents or activity were eliminated from the news story with the delinquency frame.

## Method

### Participants

Participating in the study were 355 students of Spanish nationality from the University of Salamanca with a mean age of 19.24 (range 17-45); 68.5% were women.

### Design and Procedure

A  $2 \times 2$  between-subjects factor design was used, with the independent variables being the type of frame and the type of immigrant group referred to incidentally. Two types of news frame were used: (a) immigrants as delinquents and (b) immigrants' economic contribution. Half of the news stories referred to Moroccan immigrants and the other half to Latin American immigrants.

The split-ballot questionnaire was administered in several classrooms at the University of Salamanca. In each classroom the participants were randomized into the four experimental conditions to create initially equivalent groups and to minimize the need for a pretest. Information on the study objectives was given on the front page of the questionnaire. The experimental news story was found on the second page. It had the same headline in all four conditions: "Foreigners in Spain Already Reach 3.88 Million, 8.7% of the Population" (Los extranjeros en España ya suman 3.88 millones, el 8.7% de la población). On the following pages were the dependent variables. Moreover, the following variables were also measured (as manipulation check variables and

control variables): assessment of the news story<sup>1</sup>, political self-positioning, media consumption, news consumption, interest in or involvement with the issue of immigration, engagement in conversations about the issue of immigration, and level of contact with immigrants. These variables (which are not described for reasons of space) were also included in the questionnaire to conceal the real objectives of the study.

The news stories used in the experimental study were constructed taking as a reference previous research on content analysis. The four experimental news stories (containing between 533 and 547 words) had a common core section presenting the main topic, while the headline, lead, and conclusion of all four experimental news stories remained the same. All of these news stories contained testimonies and direct quotes from experts and citizens who gave their personal opinion on the news topic.

The general text of the news story used in the experiment was focused on the latest data from the Spanish National Institute of Statistics (Instituto Nacional de Estadística; INE, 2011) regarding the increase in the immigrant population in Spain, and future trends. Within this context, the development of the news story (composed of four paragraphs) referred to the consequences that immigration has had in Spain. Two versions of the news story were made up depending on the salient frame considered. One of them (delinquency frame) referred to the negative consequences of immigration for the country, linking the text to different pieces of information, testified to by an alleged expert, about the increase in crime attributable to immigration:

Although the consequences of the increase in immigration can be seen at different levels, one of the most debated issues in recent years has been the link between immigration and crime. According to the recent study entitled “Immigration and Crime,” directed by Professor Andrés Avilés of the University Institute for Research on Homeland Security, there has been a notable increase in crimes committed by foreigners. In the last decade, arrests of foreigners have tripled from 18,000 in 1992 to 65,000 in 2001. . . . Professor Avilés concluded his study affirming that “the relationship between immigration and crime in Spain is no myth; it is a fact that arrest rates are higher among immigrants than among the native population, and the same could be said about imprisonment rates. . . .”

Additionally, the third paragraph mentioned an alleged witness (*Fernando González*), identified as a resident of the Villaverde district in Madrid, who related how robberies and delinquency in general had increased, and he said, “I

am afraid for my children and worried if they have to go out alone,” because he thought crimes were getting worse and worse.

In another version (economic consequences frame), after the general information on the increase of immigration in Spain, the positive economic consequences of immigration produced for the country were highlighted with data contributed by an alleged expert: “Although the consequences of the increase in immigration can be seen at different levels, one of the most debated issues in recent years has focused on determining the economic consequences of immigration.” Andrés Avilés, professor of the Study Institute on Migrations of the Catholic University of Comillas, warns that “knowing what is happening with our immigration, in particular its impact on our future is a pressing need. The immigrants have paid in 21,000 million Euros in social insurance since 1999. This has made foreign workers’ membership in Spanish Social Insurance soar to 9.3%. . . .” In other words, the immigrants’ contribution amounts to a stronger guarantee for pension maintenance.

In addition, the third paragraph of the news story in this version mentioned a resident of the Villaverde district in Madrid (*Fernando González*) who pointed out how he had witnessed new stores opening and commercial activities growing in his neighborhood since the immigrants arrived. He added that “jobs nobody wanted before are now being taken by the immigrants.”

The second manipulation of the news story was related to the incidental presentation of information on the geographical or national origin of the immigrants mentioned (group cue). Throughout the news story, depending on the version, either the Moroccan or Latin American origin of the immigrants was mentioned on three occasions for different story telling. In the news lead, either the Moroccan or Latin American community was emphasized as being the largest. In the first paragraph, more statistical data were used to show the immigrants’ presence in Spain, stating that “in the beginning of 2006, the Latin American [Moroccan] community was the largest.” At the end, the third paragraph referred to the immigrants’ origin for the last time, when *Fernando González* related the changes that had taken place in his neighborhood due to the increase in immigrant population, indicating that either numerous Latin American or Moroccan immigrants had settled in.

## Variables and Instruments

### Cognitive Responses

These were evaluated by means of the thought-listing technique (Valkenburg et al., 1999). The subjects were asked to

<sup>1</sup> A semantic differential composed of 7 bipolar scales (of 7 points) was used, with the antonymic adjectives “clear-confusing”, “easy/difficult to read”, “deep-superficial”, “complex-simple”, “contextualized-decontextualized”, “imprecise-rigorous” and “entertaining-boring” placed at the ends of each scale. In order to test the homogeneity of the experimental stimuli, an analysis was made to see whether there were any differences in each assessment attribute as a function of the two independent variables of the study (news frame and group cue). No significant differences were detected in any of the tests carried out ( $p > .10$  in all cases), and therefore it can be concluded that the four versions of the news story used in the study were equivalent.

“write down all the thoughts, ideas, or reflections induced by reading the news story, that is, those impressions that came to mind while reading it.” Taking each of the written ideas as a unit of analysis, two analysts evaluated the criteria:

- (a) presence of the *delinquency frame*, by means of comments on the relation between immigration and criminality (1 = yes, 0 = no).
- (b) presence of the *economic consequences frame*, by means of comments on the improvement of the economy, immigrants’ having jobs that nobody else wants, reinforcement of the working population, or the increase in business activity (1 = yes, 0 = no).
- (c) *polarity of the cognitive response*: critical, negative, or unfavorable comment (value -1), ambivalent, non-evaluative, or descriptive comment (value 0), or a positive or favorable comment (value 1), in relation to immigration.

To evaluate the reliability of the coding process, 71 questionnaires were chosen randomly (20% of the sample, for a total of 288 cognitive responses), and two independent analysts coded the criteria in question. The reliability of the coding of the cognitive responses was calculated using Scott’s  $\pi$  coefficient, which gave the following values: reference to the delinquency frame (.82), reference to the economic consequences frame (.85), and polarity (.68).

### Emotions Felt While Reading the News Story

A scale of 10 items was used, and each item described an emotion: interest, happiness, surprise, sadness, anger, disgust, contempt, fear or anxiety, shame and guilt (see Igartua, Cheng, & Lopes, 2003). Participants were asked to indicate how much the news story had made them feel those emotions (from 1 = *not at all*, to 5 = *very much*). Principal components factor analysis with varimax rotation extracted three factors that jointly explained 61.24% of the variance. Based on these results, three indices were created of the emotions the participants felt while reading the new story:

- (a) negative emotions of disgust, contempt, anger, shame, and fear ( $\alpha = .82$ ),
- (b) negative emotions of guilt and sadness ( $\alpha = .42$ ;  $r = .28$ ,  $p < .001$ ), and
- (c) positive emotions of interest, surprise, and happiness ( $\alpha = .35$ ).

As can be seen, it is the first indicator that shows the greatest internal consistency.

### Importance of Immigration as a Problem

The text of the question was the following: “Please indicate, in your opinion, to what extent the following matters are important problems for the country” (*immigration* was one of 13 issues presented). Subjects had to choose a degree of importance between 0 (*not at all important*) and 10 (*very important*).

### Attitude Toward Immigration

Subjects were asked the following: “As you know, all developed countries receive immigrants. Do you think, in general, immigration is more positive or more negative for Spain?” Subjects indicated their opinion on an 11 point scale (0 = *very negative*, 10 = *very positive*).

### Beliefs About the Consequences of Immigration

A scale was built with eight affirmations about the consequences of immigration in Spain (Domke et al., 1999; Igartua & Cheng, 2009). Subjects had to indicate to what degree they agreed with the following statements (1 = *totally disagree*, 5 = *totally agree*):

- (1) “Immigrants take on jobs that native Spaniards don’t want”
- (2) “In Spain today we still need immigrant workers”
- (3) “The increase in immigration favors an increase in crime”
- (4) “It is difficult for a society to work or advance without immigrants”
- (5) “There is a close relationship between immigration and a decline in law and order”
- (6) “The increase in immigrants favors the economy of the country”
- (7) “Whenever I think of immigrants, all the trouble they cause comes to mind”
- (8) “In general, immigrants are contributing to Spain’s development.”

Principal components factor analysis with varimax rotation extracted two factors (62.43% of the variance). The first factor (items 3, 5, and 7) refers to the belief that “immigration favors an increase in crime and public insecurity” ( $\alpha = .85$ ); the second factor (items 1, 2, 4, 6, and 8) refers to the belief that “immigration contributes economically to the country” ( $\alpha = .75$ ).

## Results

### Hypothesis 1: Effects of Cognitive Channeling

Analysis of covariance (ANCOVA) was used to test the main and interaction effects of both independent variables into the dependent variables, statistically controlling for the covariates sex, age, political self-positioning, interest or involvement with the issue of immigration, participation in conversations about the issue of immigration, level of contact with immigrants, media consumption, and news consumption. In this way the information impact of the independent variables was obtained, statistically controlling for the effect of other relevant variables, thereby increasing the statistical power of the analysis.

With regard to the cognitive responses focused on the relationship between immigration and crime, a significant effect of the frame type was observed,  $F_{\text{frame}}(1, 278) = 182.04$ ,  $p < .001$ ,  $\eta_p^2 = .396$ . This shows that the participants exposed to the news story with a delinquency frame had more cognitive responses focused on the link between immigration and crime than the participants exposed to the frame of economic consequences (see Table 1). However, a significant interaction effect was not observed between the independent variables.

Significant effects according to frame type were also observed regarding the percentage of cognitive responses centered on positive economic consequences,  $F_{\text{frame}}(1, 278) = 211.62$ ,  $p < .001$ ,  $\eta_p^2 = .432$ . However, a significant interaction effect was not observed between the independent variables. Students who read the news story with the economic consequences frame wrote more responses related to the economic contribution of immigrants than those who read the news story with the delinquency frame.

Statistically significant differences were observed in the polarity of the cognitive responses according to frame type,  $F_{\text{frame}}(1, 278) = 28.74$ ,  $p < .001$ ,  $\eta_p^2 = .094$ . Students who had read a news story with a delinquency frame generated more critical comments about immigration than those exposed to a news story emphasizing immigrants' economic contribution. However, the interaction effect was not statistically significant.

## Hypothesis 2: Attitudinal Effects

In accordance with the hypothesis posed, statistically significant differences were observed in the perception of the importance of immigration as a problem for the country as a function of the frame type,  $F_{\text{frame}}(1, 289) = 8.88$ ,  $p < .003$ ,  $\eta_p^2 = .030$ . However, a significant interaction effect was not observed between the independent variables. Students exposed to the news story linking immigration and crime gave more importance to immigration as a problem than those exposed to the news story highlighting the positive economic consequences (see Table 2).

A significant effect was observed in attitudes toward immigration as a function of frame type,  $F_{\text{frame}}(1, 289) = 18.49$ ,  $p < .001$ ,  $\eta_p^2 = .060$ . However, the interaction effect was not statistically significant. Students exposed to the news story that emphasized immigrant's economic contribution to the country showed a more positive attitude than the participants exposed to the news story with a delinquency frame.

The negative belief "immigration favors crime and public insecurity to increase" was significantly affected by frame type,  $F_{\text{frame}}(1, 289) = 4.01$ ,  $p < .046$ ,  $\eta_p^2 = .014$ . However, the interaction effect between both independent variables was not statistically significant. Subjects exposed to news emphasizing the association between immigration and delinquency showed a higher degree of agreement on

Table 1. Effect of frame type and group cue on cognitive responses (ANCOVA)

Main and interaction effects	Crime CR		Econ. Conseq. CR		Polarity CR	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>News frame</i>						
– Delinquency	47.59	28.54	7.02	15.49	–0.09	0.57
– Economic consequences	8.94	18.18	45.72	27.68	0.19	0.57
$F_{\text{frame}}(1, 278)$	182.04***		211.62***		28.74***	
$\eta_p^2$	.396		.432		.094	
<i>Group cue</i>						
– Latin Americans	30.45	30.77	26.37	28.82	0.03	0.57
– Moroccans	27.59	31.00	25.11	30.08	0.06	0.60
$F_{\text{group cue}}(1, 278)$	0.55		0.57		0.09	
$\eta_p^2$	.002		.002		.000	
<i>News frame × group cue</i>						
– Delinquency, Latin Americans	48.35	28.67	7.38	13.74	–0.12	0.54
– Delinquency, Moroccans	46.90	28.59	6.69	16.99	–0.06	0.59
– Econ. conseq., Latin Americans	10.90	18.83	47.11	26.62	0.21	0.56
– Econ. conseq., Moroccans	7.25	17.55	44.51	28.69	0.18	0.59
$F_{\text{frame} \times \text{group cue}}(1, 278)$	0.03		0.10		0.77	
$\eta_p^2$	.000		.000		.003	

Notes. ANCOVA controlling for sex, age, political self-positioning, interest or involvement with the issue of immigration, frequency of engagement in conversations about immigration, level of contact with immigrants, media consumption, and news consumption. Dependent variables: *Crime CR* = percentage of cognitive responses centered on the relationship between immigration and crime; *Econ. conseq. CR* = percentage of cognitive responses linking immigration to the country's economic progress; *Polarity CR* = polarity index of the cognitive responses in relation to immigration (from  $-1$  = negative cognitive response, to  $1$  = positive cognitive response). \*\*\* $p < .001$ .

Table 2. Effect of frame type and group cue on perception of the importance of immigration as a problem to the country, attitude, and beliefs about the consequences of immigration (ANCOVA)

Main and interaction effects	Im. as Prob.		Attitude		Neg. belief		Pos. belief	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>News frame</i>								
– Delinquency	8.15	1.87	5.27	2.04	3.15	0.97	3.46	0.71
– Economic consequences	7.58	2.42	6.03	2.27	2.99	1.09	3.55	0.72
$F_{\text{frame}}(1, 289)$	8.88**		18.49***		4.01*		3.28 <sup>†</sup>	
$\eta_p^2$	.030		.060		.014		.011	
<i>Group cue</i>								
– Latin Americans	7.86	1.97	5.51	2.13	3.12	1.01	3.50	0.70
– Moroccans	7.88	2.35	5.76	2.23	3.03	1.06	3.50	0.73
$F_{\text{group cue}}(1, 289)$	0.01		1.29		0.14		0.00	
$\eta_p^2$	.000		.004		.000		.000	
<i>News frame × group cue</i>								
– Delinquency, Latin Americans	8.07	1.87	5.32	1.97	3.17	0.98	3.46	0.67
– Delinquency, Moroccans	8.23	1.88	5.23	2.11	3.14	0.98	3.45	0.75
– Econ. conseq., Latin Americans	7.63	2.07	5.74	2.30	3.06	1.05	3.55	0.74
– Econ. conseq., Moroccans	7.53	2.71	6.29	2.23	2.93	1.13	3.55	0.70
$F_{\text{frame} \times \text{group cue}}(1, 289)$	0.43		2.11		0.84		0.02	
$\eta_p^2$	.002		.007		.003		.000	

Note. ANCOVA controlling for sex, age, political self-positioning, interest or involvement with the issue of immigration, frequency of engagement in conversations about immigration, level of contact with immigrants, media consumption, and news consumption. Dependent variables: *Im. as Prob.* = perception of the importance of immigration as a problem to the country (from 0 = not at all important, to 10 = very important); *Attitude* = attitude toward immigration (from 0 = very negative, to 10 = very positive); *Neg. belief* = “Immigration favors an increase in crime and public insecurity” (from 1 = totally disagree to 5 = totally agree); *Pos. belief* = “Immigration contributes economically to the country” (from 1 = totally disagree, to 5 = totally agree). <sup>†</sup> $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

this belief than those who read a news story which stressed the immigrants’ economic contribution. The positive belief “immigration contributes economically to the country” was marginally affected by frame type,  $F_{\text{frame}}(1, 289) = 3.28, p < .071, \eta_p^2 = .011$ . However, the interaction effect was not statistically significant. The participants exposed to the news story highlighting immigrants’ economic contribution showed greater agreement with this belief than those exposed to the news story linking immigration to crime.

**Hypothesis 3: Framing Emotional Response**

A significant effect caused by the type of news frame was observed in the negative emotions of disgust, contempt, anger, shame, and fear,  $F_{\text{frame}}(1, 295) = 19.15, p < .001, \eta_p^2 = .061$ , guilt and sadness,  $F_{\text{frame}}(1, 293) = 28.40, p < .001, \eta_p^2 = .088$ , and the positive emotions of interest, surprise, and happiness,  $F_{\text{frame}}(1, 294) = 38.43, p < .001, \eta_p^2 = .116$ . The news story with the delinquency frame, as opposed to the one with the economic contribution frame, induced more negative emotions of disgust, contempt, anger, shame, and fear ( $M = 1.94, SD = 0.83; M = 1.61, SD = 0.86$ ), more negative emotions of guilt and sadness ( $M = 2.23, SD = 0.89; M = 1.74, SD = 0.78$ ), and fewer positive emotions ( $M = 2.58, SD = 0.57; M = 3.02, SD = 0.70$ , respectively).

The inclusion of the geographic or national origin of the immigrants did not have a significant effect on the negative

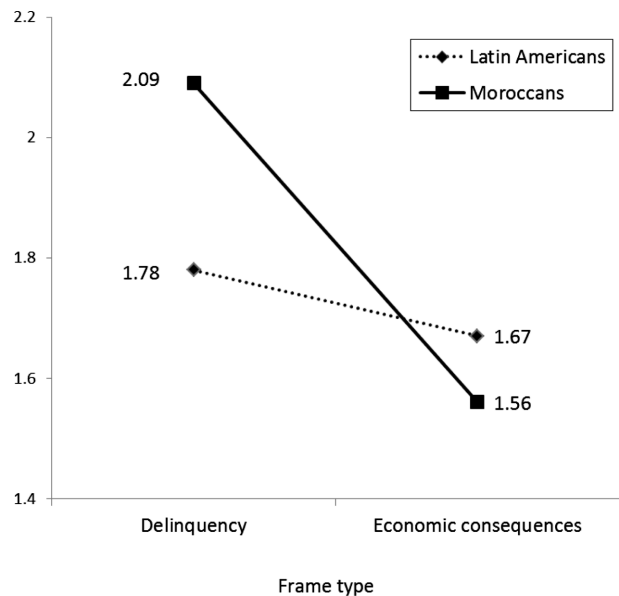


Figure 1. Effect of frame type and group cue on the negative emotions index (disgust, contempt, anger, shame, and fear;  $\alpha = .82$ ) (ANCOVA).



emotions of disgust, contempt, anger, shame, and fear,  $F_{\text{group cue}}(1, 295) = 2.17$ ,  $p = .142$ ,  $\eta_p^2 = .007$ , or on the negative emotions of guilt and sadness,  $F_{\text{group cue}}(1, 293) = 0.86$ ,  $p = .770$ ,  $\eta_p^2 = .000$ , or on the induction of positive emotions,  $F_{\text{group cue}}(1, 294) = 0.35$ ,  $p = .553$ ,  $\eta_p^2 = .001$ .

Finally, as hypothesized, a significant interaction effect was observed between the independent variables in the induction of the negative emotions of disgust, contempt, anger, shame, and fear,  $F_{\text{frame} \times \text{group cue}}(1, 295) = 8.84$ ,  $p < .003$ ,  $\eta_p^2 = .029$ . The delinquency frame induced more negative emotions of disgust, contempt, anger, shame, and fear when the immigrants in question were said to be Moroccan ( $M = 2.09$ ,  $SD = 0.88$ ) than when they were said to be Latin American ( $M = 1.78$ ,  $SD = 0.74$ ),  $t(178) = -2.29$ ,  $p < .023$ ; in contrast, there were no significant differences in the induction of emotions as a function of the immigrants' origin ( $M = 1.56$ ,  $SD = 0.80$ , Moroccan;  $M = 1.67$ ,  $SD = 0.94$ , Latin American) when the news frame was that of positive economic consequences,  $t(168) = 0.59$ ,  $p = .550$  (Figure 1).

## Discussion

The results of this study provide important support for the hypotheses posited: The type of frame stressed in a news story has a significant effect on cognitive channeling, on the perception of the importance of immigration as a problem, on attitudes toward immigration, on beliefs about the consequences of immigration for the country, and on emotional responses. In contrast to the economic contribution frame, the most *problematizing* immigration frame (which associates it with a rise in delinquency and a decline in law and order as immigrant numbers increase), not only conditions how people think when reading the news (a process called cognitive channeling) but also induces a negative attitude toward immigration and reinforces negative beliefs about the impact of immigration on the host country. Thus, the way the news on immigration is focused generates cognitive and attitudinal effects, which in turn is convergent with the results of previous research studies on the framing effect (e.g., Domke et al., 1999; Igartua & Cheng, 2009; Price et al., 1997; Shah et al., 2004; Shen, 2004a; Valkenburg et al., 1999). Moreover, it was also observed that the way immigration was approached in the news story produced a significant effect on the participants' emotions, such that when reading a news story linking immigration to delinquency (as opposed to one highlighting the economic contribution of immigrants) the participants experienced more negative and fewer positive emotions. This result is an important contribution to the study of the framing effect, since previous research studies did not find significant effects of the news frames on emotions but rather that the emotions felt were conditioned by individuals' predispositions, such as their prior opinions on the topic addressed in the news story (Gross & Brewer, 2007) or their ideology (Gross & D'Ambrosio, 2004).

It has been suggested that the framing effect can occur through a peripheral route of processing (Chong & Drukman,

2007; Igartua & Cheng, 2009; Perse, 2001). This kind of processing, which is superficial and automatic, is based on peripheral cues instead of news content. One of these peripheral cues in the case of immigration news is the mention of the immigrants' ethnic, national, or geographic origin (group cue) (Brader et al., 2008; Cho et al., 2006; Domke, 2001). In this sense, the hypothesis has established that if the protagonists of an event described in certain (experimental) news stories are underprivileged immigrants (like the Moroccans in the case of Spain) in contrast to more privileged immigrants (like those from Latin America), immigration would be more likely to be seen as a problem, a more negative attitude toward immigration would be formed, and more negative emotions will be stimulated during reading of the news story, even if the same type of news frame is mentioned.

Following this approach, Igartua and Cheng (2009) observed that the incidental presentation of information on the immigrants' geographic origin that carried a worse image in Spanish public opinion (Moroccan) exacerbated judgments and strengthened negative attitudes and beliefs. These results are consistent with those obtained by Brader et al. (2008) in the case of the United States. In the present study, however, the starting hypotheses have only been partially confirmed. Significant interaction effects were observed between news frame and group cue in the induction of negative emotions of disgust, contempt, anger, shame, and fear (as posited in Hypothesis 3). The participants felt more negative emotions of disgust, contempt, anger, shame, and fear when the news story had a delinquency frame and involved Moroccan immigrants than when it had to do with Latin American immigrants; in contrast, no significant differences were found as a function of the immigrants' origin when the news frame was a positive economic contribution. Thus, the fact that the simple reference to a stigmatized immigrant group in the news story with the delinquency frame provoked a more intense negative emotional reaction can be interpreted as the result of heuristic-type processing. Accordingly, the presence of a peripheral element within the informative text (the incidental reference to immigrants of Moroccan origin) would produce the activation of stereotypical reactions (e.g., Dixon & Maddox, 2005), such as "all Moroccan immigrants are problematic or potential delinquents" or "you can't trust Moroccan immigrants," which in turn make the delinquency frame stimulate a more intense negative emotional reaction. If the framing effect were related to more careful or systematic cognitive processing (via the central route), the mere inclusion of information about a stigmatized group in the news story should not bias emotional responses, and the intensity of the negative affective response to a news item involving Moroccans (stigmatized group) would be similar to the response to one involving Latin American immigrants (nonstigmatized group). Furthermore, the results cannot be interpreted as the manifestation of a priming effect, since the incidental mention of the immigrants' geographical origin, in itself, did not exert a significant effect on cognitive responses, attitudinal indicators, or emotions.

However, unlike the results obtained by Brader et al. (2008) and Igartua and Cheng (2009), the hypothesized interaction effect between news frame and group cue was

not observed in the cognitive and attitudinal variables. Two explanations can be put forward in this regard. One would be related to the construction of the experimental news stories. Most studies on the impact of racial or group cues tend to link an incidence of delinquency (a crime) to a specific protagonist, varying (manipulating) the ethnic or group origin of the perpetrator (see, e.g., Dixon & Maddox, 2005). These studies thus present a particular case that can relatively easily activate the stereotypes of the participants in the research. Likewise, in the experiment done by Igartua and Cheng (2009), the news story with a delinquency frame mentioned an incident in which a specific immigrant had committed a crime involving the death of a Spanish citizen. However, in the experimental news stories used in the present study, the information on the geographic origin of the immigrants was only given *incidentally*, without specifying a particular protagonist. That is why the information on the group cue is thought to have had a lesser impact in the present study in comparison with the research by Igartua and Cheng (2009).

A second explanation would be related to the interest<sup>2</sup> shown by the participants in the study regarding the topic addressed (immigration). The participants scored very high in the indicator addressing interest in the topic of immigration:  $M = 3.88$ ,  $SD = 0.78$ , the theoretical median point being 3.00;  $t(353) = 21.15$ ,  $p < .001$ ; 72.9% said that they were “quite” or “very” interested in the topic of immigration. In this context of *high elaboration likelihood*, it is possible that the peripheral cues (group cues) did not exert the expected effect, and the participants processed the news via a central route, at least in explicit attitudinal indicators. In fact, it has been observed that the framing effect is stronger in topics of lesser importance or interest than in more important topics (Lecheler et al., 2009). Moreover, the ELM predicts that when an individual’s involvement in the topic of the message is high, the peripheral cues it contains (such as the credibility of the source, or by extension, the geographical origin of the immigrant in the news story on immigration) have a lesser effect on attitudes, and furthermore there is an increase in cognitive elaboration or reflection. Thus, in this study it was found a posteriori that the degree of interest in the topic of immigration correlated positively with the two indicators of cognitive elaboration obtained in the thought-listing task: the total number of cognitive responses given by the participants,  $r(352) = .09$ ,  $p < .043$ , and the total number of words written,  $r(352) = .16$ ,  $p < .001$ . This shows that, indeed, the degree of interest in the topic of a news story is linked to greater cognitive elaboration or production, which is consistent with the ELM by Petty and Cacioppo (1986).

In future studies it would be important to evaluate participants’ *implicit* attitudes and not just explicit attitudes. In the present study the predicted interaction effect was indeed observed for emotions, which may be less subject to the influence of social desirability (Dovidio, Kawakami, Smoak, & Gaertner, 2009). The option of obtaining linguistic

markers or indicators could be considered, based on the thought-listing task and using computerized content analysis programs (such as Linguistic Inquiry and Word Count) to detect whether the pattern of results obtained in the present study is also observed with implicit measures of attitudes. Language reveals important information about the structure of thought, and therefore analysis of linguistic markers, for example, is a valuable resource for evaluating implicit attitudes and tackling problems such as social desirability (see von Hippel, Sekaquaptewa, & Vargas, 2009). For example, when Gorham (2006) examined the linguistic intergroup bias that a television audience showed when faced with news about crimes, he observed that negative behaviors consistent with the stereotype of the members of the outgroup (in this case, African-Americans) were described in more abstract terms.

Another additional question that future research should analyze is the relation between news frames, emotions, and attitudes in order to clarify the underlying psychological processes of framing effect. The major question here is whether news frames affect attitudes *because* they have an impact on emotions or whether negative attitudes fuel emotions.

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<sup>2</sup> To measure interest or involvement with the issue of immigration, participants were asked: “To what extent are you interested in the issue of immigration?” Respondents had to answer using an intensity scale with five scores, ranging from 1 = not at all, to 5 = very much.

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