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Framing politics

Lecheler, S.K.

Publication date
2010

[Link to publication](#)

Citation for published version (APA):

Lecheler, S. K. (2010). *Framing politics*. [Thesis, fully internal, Universiteit van Amsterdam].

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Chapter 1

NEWS FRAMING AND PUBLIC OPINION: A MEDIATIONAL ANALYSIS OF FRAMING EFFECTS ON POLITICAL ATTITUDES

Manuscript under review

Abstract

A growing number of studies show how media frames can affect the formation of public opinion. To disentangle these effects, scholars must consider their underlying psychological processes or mediators. However, to date, there is no satisfactory account of the mediators of framing effects, and the explanatory power of different established mediators has not been addressed. Based on an experimental study ($n = 1,537$), this article presents a mediation analysis of a news framing effect on opinion, testing for two significant mediation processes: belief importance and belief content change. Results show that framing is mediated by both belief importance and belief content change, with belief content being the more prominent mediator. The extent to which each process takes effect depends on an individual's level of political knowledge. Knowledgeable individuals are affected to a greater extent via both belief content and belief importance change. The implications for future framing effects research are discussed.

Introduction

Framing theory can explain to what extent the media affect citizens' understanding of politics. Accordingly, a large amount of studies report significant effects of media frames on the formation of public opinion (e.g., Berinsky & Kinder, 2006; Druckman, 2001a; Druckman & Nelson, 2003; Entman, 1991; Schuck & de Vreese, 2006). Yet, it is not only the presence or magnitude of the effect that is of interest. Scholars must also consider the underlying psychological processes of such effects. In recent years, a growing number of studies have sought to understand *how* and under which conditions political news can affect public opinion, and have thus begun to build a richer theoretical base for framing research (e.g., Baden & de Vreese, 2008; Chong & Druckman, 2007; Matthes, 2007; Nelson, Oxley, & Clawson, 1997; Slothuus, 2008).

A frame can affect an individual by stressing certain aspects of reality and pushing others into the background – it has a selective function. In this way, certain issue attributes, judgments and decisions are suggested (e.g., Berinsky & Kinder, 2006; D.A. Scheufele, 2000). Early studies conceived of the framing process as an accessibility effect (Iyengar, 1991), while subsequent research found the effect process to be more complex. A number of scholars propose belief importance change to be the most characteristic mediator of framing: Frames make suggestions to the individual by rendering already available and accessible considerations more important than others, thereby leading these considerations to be applied when forming an opinion (e.g., Nelson et al., 1997; Price, Tewksbury, & Powers, 1997; Tewksbury & Scheufele, 2009). Recent studies show, however, that a frame does not only render certain considerations more important, but that it can also make new considerations available; it can also change an individual's belief content (e.g., de Vreese, Boomgaarden, & Semetko, in press; Lecheler, de Vreese, & Slothuus, 2009; Shah, Kwak, Schmierbach, & Zubric, 2004). Recently, Slothuus (2008) has presented a “dual-process” mediation model of news framing, accounting for both belief importance and belief content change. However, the explanatory power of the two processes remains unclear (see Chong & Druckman, 2007). Accordingly, we do not know which of the two mediators prevails, and how mediation processes differ depending on the news frame or issue at stake.

Therefore, this study conducts a mediational analysis including both belief importance and belief content change. In our theoretical framework, we combine extant knowledge on mediated framing effects with recent empirical evidence on the role of belief importance and belief content change. By use of an experimental survey design, we test the mediation model and determine the explanatory power and relationship of the two mediators. We also test the contingency of framing effects on one of the most significant moderators of framing, political knowledge.

Mediators of Framing Effects

The study of mediators refers to the specification of the intermediary causal mechanisms by which an independent variable influences the dependent variable (Baron & Kenny, 1986; Muller, Judd, & Yzerbyt, 2005; Preacher & Hayes, 2004). A frame, for instance, causes change in the weight we assign to certain beliefs which, in turn, can affect how citizens understand politics. Following Baron and Kenny (1986, p. 1176), a prerequisite for a mediated effect is a general direct effect of the independent variable on the dependent variable. Secondly, the independent variable must have a significant effect on the proposed mediator. Lastly, the proposed mediator variable must have a significant effect on the dependent variable. By controlling for the proposed mediator, the effect of the independent variable on the dependent variable must decrease. Should the decrease of the direct effect not be complete, indication is given for the “operation of multiple mediation factors” (see also Preacher & Hayes, 2008).

A mediational analysis therefore requires the presence of a direct relation between the frame and the measured outcome variable. Studies have generally tested this link by presenting participants with either equivalency or emphasis frames (Druckman, 2001b). Equivalency framing refers to the presentation of logically identical, yet differently phrased decision scenarios (e.g., Kahneman & Tversky, 1984). In emphasis framing, researchers choose material that emphasizes several aspects of an issue. This is likely to render the used frames closer to “real-life” journalistic news coverage and emphasis frames are widely used in framing effects research (e.g., Entman, 1993; D. A. Scheufele, 2000; Schuck & de Vreese, 2006). In addition, studies normally work with either of two types of news frames: issue-specific and generic frames (Semetko & Valkenburg, 2000). Issue-specific frames pertain to a particular topic while generic news frames are applicable to a wide range of topics. This wide application of generic frames makes it easier to compare framing effects across conditions and generic frames are thus utilized in the present study.¹

Thus far, research has identified three basic processes likely to mediate framing effects: (1) accessibility change, (2) belief importance change and (3) belief content change (see Chong & Druckman, 2007; Nelson et al., 1997; Slothuus, 2008). Accessibility change as an intermediary mechanism is hypothesized to function by making considerations in the individual’s mind more salient and therefore more likely to be used when forming an opinion (e.g., Iyengar, 1991; B. Scheufele, 2004). Thus, essentially, accessibility change does not refer to the alteration of content within the individual’s mind, but merely to the accentuation of certain existing beliefs (e.g., Iyengar & Kinder, 1987). D.A. Scheufele (2000, p. 309) discards the notion of accessibility in framing theory, stating that “framing influences how audiences think about issues, not by making aspects of the issue more salient, but by invoking interpretative schemas that influence the interpretation of incoming information”. Along these lines, the presumed lack of an accessibility effect of frames is sometimes held to be one of the main distinguishing factors between framing effects and agenda-setting and priming (e.g., Miller, 2007; D. A. Scheufele,

2000). Accessibility change, moreover, proves to be difficult to tap by empirical investigation (see Baden & de Vreese, 2008), and studies aimed at establishing accessibility as a mediator of framing effects have delivered at best equivocal results (e.g., de Vreese, 2009). Consequently, accessibility change is not pursued in the current study.²

Belief Importance Change

Belief importance change is thought to be the most characteristic mediator of framing effects (e.g., Druckman, 2001a; Nelson & Oxley, 1999; Nelson et al., 1997; Tewksbury & Scheufele, 2009). It refers to framing as “altering the *weight* of particular considerations” in the individual’s mind (Nelson et al., 1997, p. 236, italics in original). Thus, frames do not render certain frame-related beliefs more salient, but increase the weight that is assigned to those beliefs. As an intermediary, important considerations, in turn, are more likely to be incorporated into subsequent judgments (e.g., Price & Tewksbury, 1997). Thus far, extant research has widely examined and supported models of belief importance change as a mediator of framing effects (e.g., Druckman, 2001a; Druckman & Nelson, 2003; Nelson et al., 1997). Based on such findings, we find belief importance change a theoretically as well as empirically plausible mediator of framing effects. It thus forms a decisive part of the mediated effect of news framing on opinion. We consequently examine belief importance change as the first mediator of framing effects. Our expectation is stated as:

H1a: News framing effects are mediated through belief importance change.

Belief Content Change

Recently, scholars have turned to a third possible mediator for framing effects: *belief content change* (e.g., Lecheler et al., 2009; Shah et al., 2004; Slothuus, 2008). A belief content change model refers to the addition of new beliefs to an individual’s set and alludes to one of the most established mechanisms in media effects research - the persuasive effect (e.g., Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Zaller, 1992). Yet, belief content change has been widely disregarded in framing effects. Nelson et al. (1997, p. 225, italics in original) note that “frames operate by activating information *already at the recipients’ disposal*, stored in long-term memory” – leaving a “true” framing effect to be determined by its subtle influence through rendering certain available (and accessible) considerations more important than others. While such theoretical limitations did contribute to the strengthening of framing as a media effects approach independent from persuasive effects, they reduce the chances of providing an exhaustive picture of the psychological mechanisms caused by exposure to a media frame. This might specifically be the case when examining the effects of framing of political issues. Studies that investigate political news framing often cover issues that seem unimportant and remote to citizens and the number of available and accessible beliefs might therefore be very limited.

Political news framing should thus not only function via belief importance change, but also provide new beliefs to the individual.

Slothuus (2008, p. 7) accounts for this conceptual slippage by arguing that framing “must be considered an independent variable and that this independent variable can have different effects, depending on its receivers” (see also D. A. Scheufele, 1999). Along this line, a frame can have belief importance change as well as other effects (see also Lecheler et al., 2009). This enables the distinction between what is traditionally called a *framing effect* on the one hand, and the *effect of a frame* on the other. Along these lines, a news frame can have a variety of effects, which are also worthwhile examining (see Tewksbury & Scheufele, 2009 for an overview).

Accordingly, Slothuus (2008) proposes a “dual-process” model of framing effects by combining both intermediary paths of belief importance and belief content change. Results of his experimental study show that frames affect opinion via the two proposed mechanisms, with belief content change being a significant mediator for individuals of more moderate levels of political knowledge. Along this line, belief content change may also result in more elaborate information processing and “greater” framing effects. Shah et al. (2004, p.114) find that exposure to unfamiliar information in the form of frames lead individuals to adjust their beliefs on a specific topic, and to consequently “generate more detailed cognitions” (see also Baden & de Vreese, 2008). Recently, Lecheler et al. (2009) found that a low-importance issue yielded in strong framing effects, and that these were predominately mediated by belief content changes.

Following these results, we predict that framing effects are also mediated by altering the content of beliefs about an issue. Because the level of magnitude of the dual process is as yet unknown, we see H1a and 1b as complementary hypotheses:

H1b: News framing effects are mediated through belief content change.

In summary, while evidence on accessibility as a mediator of framing effects remains equivocal (e.g., Miller, 2007), recent research has come to acknowledge two main mediational processes of framing effects: belief importance and belief content change. However, the model has only been tested in one previous study (Slotuus, 2008), and the explanatory power of the two mediators remains in need of further investigation. First, we do not know *which* of the two processes prevails, or whether the two act at the same time and can thus be conceived as complementary in enabling a framing effect. Second, research has yet to test the interplay between the two mediators in different contexts. Slothuus (2008) tested his dual-process model for a controversial national issue. The process might, however, be different when employing another issue that is not on top of the political agenda. This study further investigates the above questions. Because we have no clear expectations of the power relationship between belief importance and belief content change, we formulate the following open research question:

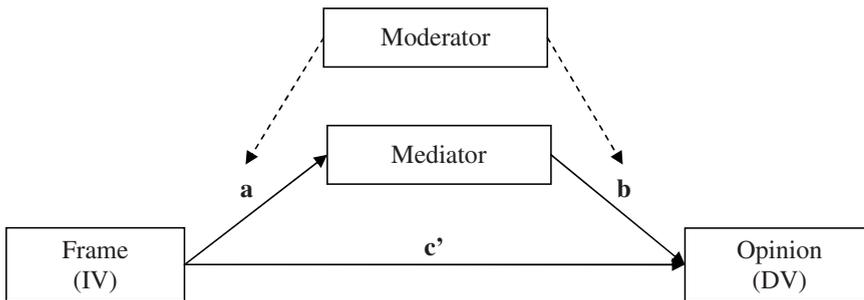
RQ: Which mediation process prevails in the dual-process model of news framing?

Moderated Mediation of Framing Effects

A model of mediated framing effects must also take into account that the effects of news frames are not equal across the board. Rather, the extent to which each mediator applies is likely to depend on a number of moderator variables, such as knowledge, values, and personal beliefs. In assessing these individual differences, mediation studies can draw on existing knowledge from studies of moderated framing effects (e.g., Druckman & Nelson, 2003; Shen & Edwards, 2005).

The moderation of a mediation process is usually referred to as *moderated mediation*. Moderated mediation occurs when “mediation relations are contingent on the level of a moderator” (Preacher et al., 2007, p. 193; see also Bucy & Tao, 2007; Frone, 1999; Muller et al., 2005; Preacher, Rucker & Hayes, 2007). This conditionality can emerge on the path between the independent variable and the mediator, as well as between the mediator and the dependent variable (see Figure 1.1). In this paper, we focus on two mediators: belief importance and belief content. Consequently, the question emerges under which circumstances each of these mediational processes is moderated.

Figure 1.1: (Moderated) Mediation of a Framing Effect



Note. c' is the direct effect of the independent variable (the frame) on the dependent variable (opinion), or the effect of the independent variable on the dependent variable when the mediator is controlled for. a is the mediated effect of the independent variable on the proposed mediator. b is the mediated effect of the proposed mediator on the dependent variable. The total effect of the independent variable on the dependent variable is the sum of the direct effect and the mediated effect (e.g., MacKinnon, Fairchild & Fritz, 2007; Preacher & Hayes, 2004). Both a and b may also depend on level of the moderator.

Research has come up with a number of individual-level moderator variables such as political knowledge (e.g., Nelson et al., 1997; Schuck & de Vreese, 2006), and values (e.g., Shen & Edwards, 2005). Moreover, several studies have investigated contextual moderators like, for instance, source characteristics (Druckman, 2001a), interpersonal communication (Druckman & Nelson, 2003), and competitive framing (e.g., Sniderman & Theriault, 2004) (see Chong & Druckman, 2007 for an overview see Lecheler et al., 2009).

Among these, political knowledge has emerged as a dominant moderator of susceptibility to framing effects (e.g., Cappella & Jamieson, 1997; Nelson et al., 1997; Price et al., 1997; Schuck & de Vreese, 2006). Yet, to date, evidence on political knowledge as a moderator variable is divided. One group of scholars finds less knowledgeable individuals to be more susceptible to framing effects, ascribing such effects to the inability of low knowledge individuals to counter-argue a framed message (e.g., Kinder & Sanders, 1990; Schuck & de Vreese, 2006). However, a second group suggests the opposite, arguing that only knowledgeable individuals possess over the adequate mental stockpile to understand and process a frame (Krosnick & Brannon, 1993; Nelson et al., 1997).

We expect political knowledge to play a decisive role in the mediational process of framing effects. Mediation via belief importance change requires the availability of frame-related beliefs (e.g., Nelson et al., 1997). Politically knowledgeable individuals are likely to be equipped with a larger set of relevant considerations and a higher level of comprehension for issue-related considerations. Thus, individuals with higher levels of political knowledge are likely to be more susceptible to framing effects via belief importance than individuals with lower levels of knowledge (Nelson et al., 1997, p. 227). Our second mediator, belief content change, operates by making new considerations available. Individuals with lower levels of political knowledge are expected to possess a smaller stock of considerations available to them. Along these lines, they are more likely to be unfamiliar with a political issue and thus more susceptible to belief content change (e.g., Zaller, 1992).

Slothuus (2008, p. 21) finds that individuals with high levels of political knowledge were framed “through importance change alone, while the moderately politically aware were framed through importance change as well as content change.”³ This indicates that political knowledge moderates the way individuals can process framed information. While these findings are plausible, they remain to be tested for additional frame scenarios and across issues. Consequently, we predict that political knowledge moderates the mediation processes of importance and content change in this study. Due to their more elaborate mental stockpile, we expect belief importance change to be the more dominant path for individuals with higher levels of political knowledge. On the other hand, belief content change is likely to apply to a greater extent for individuals with lower levels of political knowledge, as those individuals will often need to form opinion via the acquisition of new beliefs:

H2a: Belief importance as a mediator is more important among individuals with higher levels of political knowledge.

H2b: Belief content as a mediator is more important among individuals with lower levels of political knowledge.

Method

To investigate the underlying psychological processes of framing effects on opinion, we conducted a survey experiment among a representative sample of Dutch citizens. As research venue, we chose the issue of the 2007 enlargement of the European Union (EU). Specifically, we tested framing effects on opinion towards the economic development of the EU's two newest members, Bulgaria and Romania. So far, a number of studies of framing effects on attitudes towards EU integration have employed experimental designs (e.g., Maier & Rittberger, 2008; Schuck & de Vreese, 2006), while others have relied on survey data (e.g., de Vreese & Boomgaarden, 2006). Given the paucity of relevant research in mediated framing effects, we wanted to be able to isolate the steps in the causal process, for which an experimental approach was superior.

Design

In a single-factor, post-test only, between-subjects experimental design, we randomly assigned participants to one out of three conditions. In line with the manipulation used in most studies in the field, the first two conditions each contained an alternative version of a generic frame; the "economic consequences" frame (de Vreese, 2009). Specifically, one frame pointed out the *opportunities* Bulgaria and Romania presented to the EU market, and was thus positive in evaluative direction. The second frame emphasized the *risks* the two new EU countries pose for the EU market, and was thus negative in valence (see also Schuck & de Vreese, 2006). The use of alternative versions of one generic frame ensures commensurability of the effects across conditions. However, external validity in our study is high, as the economic consequences news frame can be found in real political news coverage on EU integration and enlargement (e.g., de Vreese, 2009; Neuman, Just, & Crigler, 1992; Schuck & de Vreese, 2006; Semetko & Valkenburg, 2000).

Sample

CentERdata at the University of Tilburg (The Netherlands) recruited a total of 1,537 individuals (45% female, aged between 16 and 92 [$M = 51.12$, $SD = 15.68$]) from their representative web-panel consisting of approximately 2,000 households across the Netherlands. Recruiting into the panel was done using online, phone and face-to-face contacts. Members of the panel are contacted on a regular basis via an online survey tool and are offered incentives for completing online questionnaires on their home computer. The response rate was 54 percent (AAPOR RR1).

Procedure

The experimental procedure was as follows. First, all participants completed a pre-test questionnaire, including socio-demographic variables and political knowledge. Next, participants

in the two treatment groups were exposed to one constructed news article containing either the opportunity or risk frame manipulation. Then, participants received a post-test questionnaire, recording data on belief importance and belief content, as well as opinion. Participants in the control group moved directly from pre- to post-test questionnaire, without treatment. The design also included a manipulation check (see below). A between condition randomization check on age, gender and occupation performed at the outset of the analysis revealed successful randomization with no between-group differences. The treatment and control groups did not differ with regard to political knowledge, our pre-intervention moderator variable, either ($F(2,1537) = .14, p = .98$).

Stimulus Material

The stimulus material consisted of one news article per treatment condition, containing the economic consequences frame in an opportunity or a risk version. We manipulated an article about EU investment in the Bulgarian and Romanian market after the countries' EU accession in 2007. The focus of our study on subtle psychological processes of framing required high amounts of experimental control, which meant using constructed rather than actually published news material. While the economic consequences frame can be found frequently in current political news and EU news in particular (e.g., de Vreese, 2009; de Vreese, Peter & Semetko, 2001), the use of real news coverage would have minimized the commensurability across conditions. By adjusting the article in journalistic style and lay-out, effort was made to mimic the structure and language of day-to-day Dutch news coverage. Following previous experimental studies, most information within the news article was kept identical between the two frame versions (e.g., de Vreese, 2004; Price et al., 1997), and only some parts in the news story were manipulated to point out the opportunities or risks when thinking about the economic consequences of the issue (see underlined text, Appendix B).

Manipulation Check

After being exposed to the stimulus material, participants were asked to indicate on a 7-point scale (1 = strongly disagree to 7 = strongly agree) to what extent the article dealt with advantages or disadvantages of EU enlargement. The manipulation check showed successful manipulation. Participants in the opportunity condition ($M = 5.94, SD = 1.63$) perceived their article to be more positive than participants in the risk condition ($M = 2.35, SD = 1.93$) ($t(1252) = 2.75, p < .001$). Differences between groups in the post-test can therefore be attributed to the experimental manipulation.

Measures

The dependent variable, *opinion* was measured on a 7-point scale with higher scores indicating increased support for the perceived economic benefits of Bulgaria and Romania's EU membership, ($M = 3.73, SD = 1.33$). To assess *belief importance*, participants were asked to rate

four different considerations directly related to the economic consequences frame. Specifically, participants rated these considerations according to how important they found them when forming their opinion about an economic collaboration with Bulgaria and Romania (1 = not at all important to 7 = very important) (e.g., Druckman & Nelson, 2003; Nelson et al., 1997).⁴ Following previous studies (e.g., Druckman & Nelson, 2003; Slothuus, 2008), *belief content* was measured by asking individuals to agree or disagree with a number of statements about Bulgarian and Romanian markets and economic situation within the EU. The items were measured on a 7-point scale (1 = strongly disagree to 7 = strongly agree) and summarized in an index ($M = 3.98$, $SD = 1.13$). Cronbach's alpha for belief content was .74. Higher index scores indicate a more positive expected effect from an economic collaboration with Bulgaria and Romania (for item wordings, see Appendix C).

Political knowledge was tested as a moderator of the mediational process. We measured political knowledge by using factual knowledge, which has been shown to be superior to the measurement of perceived knowledge on an issue (Delli Carpini & Keeter, 1993). Political knowledge was tapped with five factual multiple choice questions, which combined items asking for EU-related and national political issues (Hobolt, 2007; Karp, Banducci, & Bowleder, 2003, p. 278; see Appendix C).⁵ The variable ($M = .61$; $SD = .21$) is an additive index from 0 to 1. Cronbach's alpha for this scale was .73.

Results

As a prerequisite to the mediational analysis, we first examined the “direct” framing effects in our study. We found that participants in the opportunity economic consequences condition supported the idea that Bulgaria and Romania contribute to the economic growth of the EU more ($M = 4.27$, $SD = 1.26$) than those in the risk condition ($M = 3.29$, $SD = 1.22$). Participants in the control condition were, on average, between these two values ($M = 3.49$, $SD = 1.28$) ($F(2,1509) = 99.24$, $p < .001$). Thus, the frame had a significant effect on our dependent variable of opinion. In the following, we first present our results from the mediational process via belief importance. Next, belief content was added to the model and the explanatory power of both mediators was determined. Finally, we focused on political knowledge as a moderator of each cognitive process.

Belief Importance

Based on the above, we examined the psychological processes that are likely to underlie framing effects. We predicted that belief importance functions as a mediator for the effect of an opportunity frame on policy support. To start with, we analyzed the importance levels participants assigned to our belief importance considerations across conditions. Table 1.1 shows participants' importance ratings were affected.

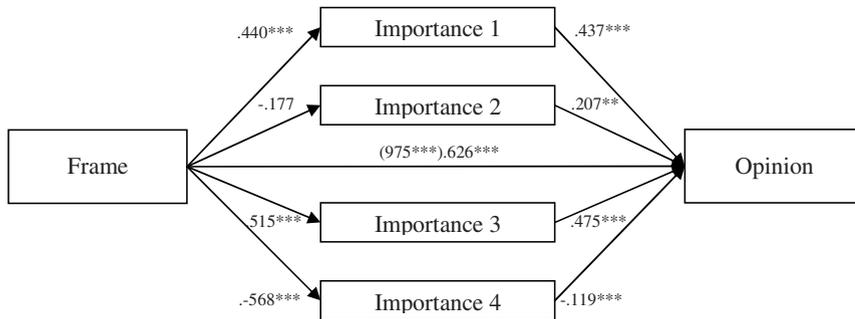
Table 1.1: Mean differences for Belief Importance Considerations

	Opportunity (n = 623)	Risks (n = 610)	Control (n = 279)
Mean (Standard Deviation) for:			
Agreement contributes towards cooperation companies & new EU members (<i>O/Importance 1</i>)	4.82 ^a (1.33)	4.38 ^b (1.37)	4.27 ^b (1.45)
Agreement is only a small step compared to much bigger necessary changes (<i>R/Importance 2</i>)	4.68 (1.27)	4.80 ^a (1.37)	4.50 ^b (1.47)
Bulgaria and Romania can be new investment markets (<i>O/Importance 3</i>)	4.91 ^a (1.34)	4.40 ^b (1.37)	4.28 ^b (1.41)
Bulgarian and Romanian markets are still characterized by difficulties (<i>R/Importance 4</i>)	4.78 ^a (1.30)	5.34 ^b (1.37)	4.92 ^a (1.42)

Note. Different superscripts indicate a significant difference at $p < .05$; all tests are two-tailed; Higher values indicate more attached importance to this argument; O = opportunity, R=risks.

Figure 1.2 confirms the mediation, showing the frame's influence on belief importance, which in turn affected opinion.⁶ Given the complexity of the opinion formation process, framing research has focused on mediating variables that significantly decrease the direct effect, rather than expecting a full mediation. Sobel (1982) provides a significance test for mediation effects, which is employed in the current study.⁷ The indirect effect of the news frame on opinion via all belief importance considerations was significantly different from zero (*Importance 1*: 5.47, ($p < .001$); *Importance 2*: -2.25, ($p < .05$); *Importance 3*: 6.38, ($p < .001$); *Importance 4*: 3.90, ($p < .001$)). Hypothesis 1a, which specified that news framing is mediated by belief importance, is supported.⁸

Figure 1.2: Mediation Analysis – Belief Importance

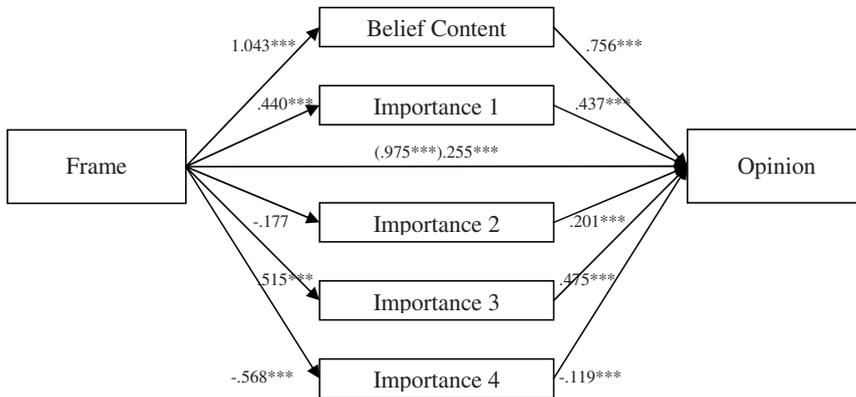


Note. Coefficients are unstandardized coefficients; all two-tailed significance tests; *** $p < .001$, ** $p < .01$; * $p < .05$. Frame is coded so that 0 = Risk and Control and 1 = Opportunity. The importance items are coded as 1=present and 0=non present. Importance items are Importance 1 = "Agreement contributes towards cooperation companies and new EU members"; Importance 2 = "Agreement is only a small step compared to much bigger necessary changes", Importance3 = "Bulgaria and Romania can be new investment markets"; Importance 4 = "Bulgarian and Romanian markets are still characterized by difficulties". Opinion is coded so that a higher value indicates increased support for the agreement; unmediated main effect in parentheses; Sobel Test statistics for Importance Change: Importance1: 5.47 ($p < .001$), Importance2: -2.25, ($p < .05$), Importance3: 6.38 ($p < .001$), Importance4: 3.90 ($p < .001$).

Belief Content

In a second step, we tested to what extent the effect of the frame was mediated by importance and belief content together. Initially, results showed significant differences in belief content, i.e., the degree to which participants saw the economic consequences of Bulgaria and Romania within the EU market in terms of opportunities or risks ($F(2,1507) = 157.49$ $p < .001$). Participants in the opportunity condition were more positive about the economic consequences ($M = 4.51$, $SD = 1.08$) than participants in the risk condition ($M = 3.47$, $SD = .98$). Participants in the control condition were between the two treatment groups ($M = 3.90$, $SD = 1.01$). To test H1b, we conducted a second path analysis including the four importance considerations, plus the belief content index. Figure 1.3 shows a large impact of the frame on belief content, which in turn affected opinion. Following the results of a Sobel test, the indirect effect of the news frame on opinion via *belief content* was significantly different from zero (*Sobel Test statistics* = 15.07, $p < .001$). Thus, supporting Hypothesis 1b, the model shows that the framing process was also mediated to a great extent by belief content.⁹

Figure 1.3: Mediation Analysis - Multiple Mediation



Note. Coefficients are unstandardized coefficients; all two-tailed significance tests; *** $p < .001$, ** $p < .01$; * $p < .05$. Frame is coded so that 0 = Risk and Control and 1 = Opportunity. The importance items are coded as 1 = present and 0 = non present. Importance items are Importance 1 = “Agreement contributes towards cooperation companies and new EU members”; Importance 2 = “Agreement is only a small step compared to much bigger necessary changes”; Importance3 = “Bulgaria and Romania can be new investment markets”; Importance 4 = “Bulgarian and Romanian markets are still characterized by difficulties”. The belief content scale is coded so that higher values indicate a more positive effect. Opinion is coded so that a higher value indicates increased support for the agreement; unmediated main effect in parentheses; Sobel Test statistics for Belief Change: 15.07 ($p < .001$).

Explanatory Power

We posed an open research question, asking whether belief content or belief importance change would prevail in our mediational model. In Table 1.2, we see that the adjusted R square significantly increases from $R^2 = .13$ in a model with only the direct effects of a opportunity news frame as a predictor for opinion ($F(1,1231) = 188.51, p < .001$) to $R^2 = .41$ after the belief importance variables are included ($F(5,1226) = 184.24, p < .001$) (R^2 change: $F(4, 1226) = 150.37, p < .001$).

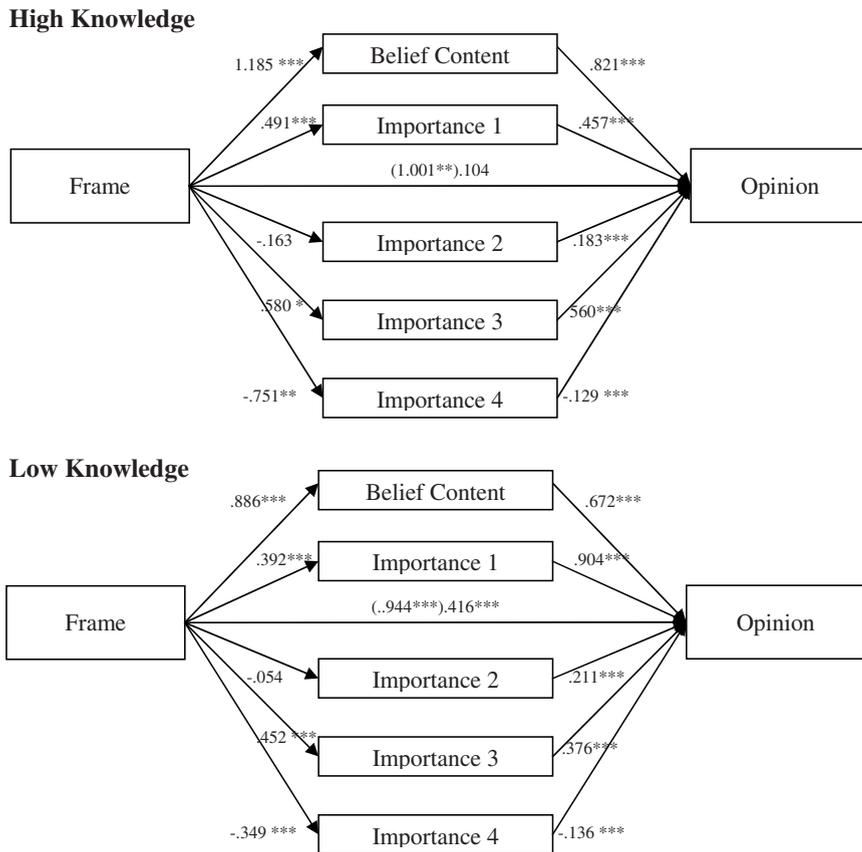
Table 1.2: Regression Models Predicting Opinion

	Model 1	Model 2	Model 3
	Direct Effect	Belief Importance	Multiple Mediation
Frame (1 = opp.)	980*** (.071)	.626*** (.061)	.255***(.059)
Belief Importance 1	--	.228***(.029)	.098***(.027)
Belief Importance 2	--	.051 (.026)	.078**(.023)
Belief Importance 3	--	.316***(.029)	.151***(.028)
Belief Importance 4	--	-.171***(.023)	-.062*(.022)
Belief Content	--	--	.554***(.033)
Adjusted R ²	.13	.41	.52
Incremental R ² (%)	--	28.5***	10.8***
N	1229	1225	1224

Note: Ordinary least squares regression. Data are unstandardized regression coefficients and standard errors (in parentheses), * $p < .05$; ** $p < .01$; *** $p < .001$. Importance items are Belief Importance 1 = “Agreement contributes towards cooperation companies and new EU members”; Belief Importance 2 = “Agreement is only a small step compared to much bigger necessary changes”, Belief Importance3 = “Bulgaria and Romania can be new investment markets”; Belief Importance 4 = “Bulgarian and Romanian markets are still characterized by difficulties”. The belief content scale is coded so that higher values indicate a more positive effect. Opinion is coded so that a higher value indicates increased support for the agreement.

In Model 3, we see another significant increase of R^2 to .52, when belief content is added ($F(6, 1225) = 227.63, p < .001$) (R^2 change: $F(1, 1225) = 279,10, p < .001$). Our results suggest that both belief importance *and* belief content explain the effect of a news frame on opinion. However, they do so to a varying degree, with belief content being the more prominent mediator variable in our analysis.

Figure 1.4 Mediation Analysis – Moderated Mediation



Note. Coefficients are unstandardized coefficients; all two-tailed significance tests; *** $p < .001$, ** $p < .01$; * $p < .05$. Frame is coded so that 0 = Risk and Control and 1 = Opportunity. The importance items are coded as 1=present and 0=non present. Importance items are Importance 1 = “Agreement contributes towards cooperation companies and new EU members”; Importance 2 = “Agreement is only a small step compared to much bigger necessary changes”; Importance3 = “Bulgaria and Romania can be new investment markets”; Importance 4 = “Bulgarian and Romanian markets are still characterized by difficulties”. The belief content scale is coded so that higher values indicate a more positive effect. Opinion is coded so that a higher value indicates increased support for the agreement; unmediated main effect in parentheses; High Knowledge Sobel Test statistics for Belief Content: 7.52 ($p < .001$); for Importance Change: Importance 1: 2.96 ($p < .001$), Importance 2: -1.67, ($p < .01$), Importance 3: 3.17 ($p < .01$); Importance4: 2.76 ($p < .01$). Low Knowledge Sobel Test statistics for Belief Change: 9.37 ($p < .001$); for Importance Change: Importance 1: 3.05 ($p < .01$), Importance 2: -.01, ($p > .05$), Importance 3: 4.21 ($p < .001$); Importance 4: 2.36 ($p < .05$).

Moderated Mediation

Thus far, we found the framing effect to be mediated by both importance and belief content. However, we also predicted the two processes to act differently, depending on level of political knowledge of the individual.¹⁰ In an additional path analysis, these two groups were compared. A comparison indicated that for both the high and low political knowledge group, framing effects were mediated via *both* importance and belief content. Figure 1.4 indicates an overall stronger effect for higher knowledge individuals via both belief content and belief importance change. As a result, H2a can be partially supported. Individuals of high political knowledge are indeed affected to a greater extent via belief importance change. However, we do not find support for H2b; individuals with lower levels of political knowledge are not framed to a greater extent with belief content change than high knowledge individuals. In sum, we find moderation, but the hypothesized mechanism resting on the range of available beliefs does not explain the pattern of moderation.

Discussion

News frames have a significant impact on the formation of public opinion. However, to fully understand *how* framing affects opinion, scholars need to gather empirical evidence on the psychological processes that underlie the effect (e.g., Chong & Druckman, 2007; Igartua & Cheng, 2009; Nelson et al., 1997; Slothuus, 2008). This article reports on an experimental study investigating the presence and explanatory power of two mediational processes of framing: belief importance change and belief content change. Based on a significant direct effect of our news frames on opinion, we analyzed mediation in three consecutive steps: First, we successfully showed the mediational process of framing via belief importance change. Next, belief content was added to the model and the explanatory power of both types of mediators was determined. Our analysis lets us carefully suggest that belief content prevailed as a mediation process in our study. An analysis of the moderating influence differing levels of political knowledge have on these mediation processes tentatively showed that both mediational processes are influenced by level of political knowledge. Our findings carefully suggest that citizens of high knowledge were more susceptible to framing via *both* belief importance and belief content change.

We believe that the strength of belief content as a mediator of framing effects versus belief importance change is one of the most interesting aspects of our findings. Initially, we showed that belief importance change mattered to a great deal – and are therefore in line with a number of other studies of framing effects (e.g., Druckman & Nelson, 2003; Nelson et al., 1997). However, belief content change was surprisingly influential in our mediation analysis – a mediator that has only very recently found attention amongst scholars of framing effects (e.g., Lecheler et al., 2009; Slothuus, 2008). Belief content change refers to the addition of *new* beliefs to an individual's mental stockpile, and alludes to one of the most established mechanisms in media effects research, the persuasive effects (e.g., Petty & Cacioppo, 1986). Thus, utilizing

belief content change in a framing effects model requires a re-definition of what exactly constitutes “framing”: D.A. Scheufele (1999) suggests that frames ought to be considered as an independent variable in the research process. We did so and concur with Slothuus (2008, p. 22), who concludes that a framing effect must be “any effect of a frame in communication on a receiver’s opinion”. Thus, while a *framing effect* may traditionally still be conceived as changing belief importance within an individual’s mind, we support a more inclusive conceptualization, which enables a frame to cause an array of *different effects*. This may lead to the future conclusion that both persuasion and framing work by similar intermediary processes (see Tewksbury & Scheufele, 2009).

This taken into account, our analysis shows to what extent mediated effects depend on other, moderating, variables. Our results illustrate that high politically knowledgeable citizens are framed to a greater extent via *both* belief importance and belief content change. This is partially in line with existing research on moderators of framing effects, namely with those studies that find that a solid stock of knowledge on an issue facilitates the processing of a frame, and results thus in large effects (e.g., Druckman & Nelson, 2003; Nelson et al., 1997; Shen & Edwards, 2005; Slothuus, 2008). However, we consequently expected our low knowledge individuals to be framed to a greater extent via belief content change, i.e. via the acquisition of new information through a frame. The results indicate that the conditionality of mediated framing effects may vary across issues, probably depending on how important an issue is to the individual or on the media agenda (Lecheler et al., 2009). Slothuus (2008) utilizes welfare policy, an issue well-discussed on the national public agenda. Our study, however, framed EU enlargement in light of the accession of Bulgaria and Romania in 2007 - an important, yet rather invisible (EU) issue (e.g., Maier & Rittberger, 2008). As our results show, even knowledgeable citizens seemed not to have possessed a satisfactory amount of available considerations connected to the issue, and were thus framed via belief content change also. This suggests that the extent to which each psychological mechanisms acts depends on the information and opinion environment an individual finds her or himself in. When a political issue is more important to elites, individuals are more likely to be exposed to issue-relevant messages, including issue frames (see e.g., Lecheler et al., 2009 for an extended discussion; Zaller, 1992).

Thus far, we know that frames can render certain frame-related beliefs more important than others. Moreover, each frame may also add new information to our memory set. This, naturally, does not represent an exhaustive model of the psychological mechanisms that underlie framing effects – and extant studies do contain reference towards a remaining “direct effect” in their intermediary models. However, interestingly, this “effect” often remains underdiscussed. Thus, we do not know what such remnants really represent. Are they merely residues, empirical artifacts of those mechanisms we did not account for? Or may there be an unmediated, *direct effect* of frames on opinion?

A first step to answer these questions must be the future identification of other mediators. Chong and Druckman (2007, p. 116) collected a number of under-discussed mediators, such as

emotions, narratives and perceptions of public opinion. Among those, emotions emerge as a most interesting, and long neglected, category. Gross and D'Ambrosio (2004, p. 21) have provided a number of clues on the effect of framing on emotional response (see also Druckman & McDermott, 2008; Nabi, 2003). The authors state that "emotional reactions are conditioned by both predispositions and the information available in a given frame". Recently, Schuck and de Vreese (2008) took up this idea and posited risk perceptions to mediate a framing effect of political news on voter mobilization – conditioned by differing levels of political efficacy.

A second step, and a liaison with our argumentation on the nature of framing effects, must be an extended side glance at other media effects theories such as agenda-setting or persuasion. Miller (2007) juxtaposes cognitive and affective mediators of the agenda-setting effect. Contrary to previous research, she finds accessibility not to be a mediator of agenda-setting (but see D. A. Scheufele, 2000). Negative emotions, however, emerge as one of the main determinants of an agenda-setting effect, by means of heightening perceptions of the importance of an issue (e.g., Martin, 2008; Schuck & de Vreese, 2008). In persuasion research, Rosselli, Skelly and Mackie (1995) found mediational processes to be determined by the rational or emotional quality of the message, with rational appeals resulting in cognitive and emotional appeals in affective processing. Concluding, we encourage future mediational analyses in framing effects research. Such analyses, however, must be conducted without the theoretical anguish that has so far limited the establishment of a comprehensive basis for framing theory: Previous studies have focused too much on distinguishing framing from other media effect theories, and have paid too little attention to the multitude of effects a frame may have.

There are a few caveats to this study. First, we base our findings on an experimental design. While experimental research provides a fantastic tool to establish causal links, we do not know how real-life persistent framing effects documented in this way are. Second, we acknowledge that our measurement of belief importance change and belief content change was not exhaustive. Our operationalization has been used in previous research (e.g., Nelson et al., 1997; Nelson & Oxley, 1999; Slothuus, 2008). However, the pre-definition of importance considerations and belief content considerations in the experimental questionnaire may have disregarded important considerations that were not included in the list (Baden & De Vreese, 2008; Lecheler et al., 2009; Nelson & Oxley, 1999). However, this does not diminish the validity of those findings presented, it merely limits their reach; and if anything means that importance and content mediation are likely to explain even more variance than we could demonstrate.

Scholarly interest in the underlying psychological processes of framing effects is growing steadily. Taking into account one well-established and one novice mediator of framing effects, this study contributes to existing literature by shifting our focus further away from simply determining whether a frame "has an effect" or not (e.g., Shah et al., 2004). Frames function, at the least, via rendering certain considerations more important than others *and* the acquisition of new consideration. However, the extent to which the two mechanisms apply might not only

depend on the individual, but also on the informational context a citizen finds him or herself in. On the road towards a more fine-grained understanding of the framing process, we must avoid a parochial understanding of what a framing effect represents behind, and consider the possible wide array of effects a framed message may have.

Notes

¹ News frames are also often characterized by a specific valence. This may affect the sort of effect such frames have. According to de Vreese and Boomgaarden (2003, p. 376), valenced emphasis frames have the capacity to affect opinion on and support for an issue, while neutral emphasis frames may only affect issue interpretation (see also Bizer & Petty, 2005).

² Recently, Chong and Druckman (2007, p. 111) have suggested that frames can also work via “making certain available beliefs accessible”. The authors, however, do not provide empirical evidence of such functioning. Baden and de Vreese (2008, p. 21) propose framing to be a two-step process, in which initially a form of ‘smart accessibility’ applies: Frames shift an individual’s informational base by making specific beliefs more salient. However, this salience shift is not random, but follows the “schematic relevance” of each belief (see also Price & Tewksbury, 1997).

³ Slothuus (2008, p. 15) utilizes six factual political knowledge questions to test for “political awareness”.

⁴ Belief Importance 1: $M = 4.54$, $SD = 1.39$; Belief Importance 2: $M = 4.69$, $SD = 1.35$; Belief Importance 3: $M = 4.59$, $SD = 1.38$; Belief Importance 4: $M = 5.03$, $SD = 1.37$.

⁵ Following Karp et al. (2003), we considered a combination of EU-related and national political knowledge items a more steady measurement of level of political knowledge in our study, simply because opinion formation on EU-matters is not independent of levels of national political knowledge (and vice versa). However, if we split the scale along these dimensions, our results do not change substantially.

⁶ For certainty, we also included a number of control variables, such as socio-demographic variables, pre-existing attitudes towards the issue, and media use in our models. While the regression coefficients shifted slightly, their overall significance pattern remained stable.

⁷ For the Sobel test ($a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2)$); a = raw (unstandardized) regression coefficient for the relation between independent variable and mediator; sa = standard error of a ; b = raw coefficient for the association between the mediator and the dependent variable (controlling for the independent variable), and sb = standard error of b . (see e.g., Sobel, 1982; MacKinnon et al., 1995).

⁸ Preacher and Hayes (2008) propose multiple mediator models to be tested via the use of bootstrapping techniques. The authors suggest that both the causal-steps approach by Baron and Kenny (1986) as well as the Sobel test (1982) are based on the assumption of normality of the sampling distribution. However, this assumption is often not given, especially when dealing with smaller sample sizes (Preacher & Hayes, 2004, p. 720). Following such recommendation, we also tested our model using (BC) bootstrapping. Our estimates are based on 5,000 bootstrap samples. The results of this additional test confirm the findings of our path-analysis: Results show that the *total effect* of a frame on opinion is significant ($b = .97$, $SE = .07$, $p < .001$). Bootstrapping for the *total indirect effect* through four belief importance mediators ($b = .35$, $SE = .04$) with a 95% BCa bootstrap CI of .2666 to .4487. As the confidence interval does not

include zero, we can consider the effect significantly different from zero. The *specific indirect effect* was $b = .10$ ($SE = .02$) (95% BCa CI of .0606 to .1491) (through *Importance 1*), $b = -.005$ ($SE = .005$) (95% BCa CI of -.0240 to .0007) (through *Importance 2*), $b = .16$ ($SE = .02$) (95% BCa CI of .1135 to .2268) (through *Importance 3*) and $b = .09$ ($SE = .02$) (95% BCa CI of .0600 to .1433) (through *Importance 4*). Thus, as proposed in our path-analytical approach, we find that three out of four belief importance variables are mediators of framing effects, as their confidence intervals did not include zero. Controlling for the mediators, the *direct effect* decreases, but remains significant ($b = .62$, $SE = .06$, $p < .001$).

⁹ We also tested our multiple mediation model via the use of bootstrapping techniques. Estimates were again based on 5,000 bootstrapping samples. For the dual-process model, we find that the total indirect effect through four belief importance mediators and the belief content mediator ($b = .72$, $SE = .05$) with a 95% BCa bootstrap CI of .6087 to .8310) does not include zero, thus the effect significantly differs from zero. The specific indirect effect was $b = .04$ ($SE = .01$) (95% BCa CI of .0162 to .0800) (through Importance 1), $b = -.009$ ($SE = .006$) (95% BCa CI of -.0275 to .0004) (through Importance 2), $b = .07$ ($SE = .01$) (95% BCa CI of .0433 to .1208) (through Importance 3), $b = .0357$ ($SE = .01$) (95% BCa CI of .0080 to .0692) (through Importance 4) and $b = .57$ ($SE = .05$) (95% BCa CI of .4747 to .6847) (through Belief Content). Thus, we find that three out of four belief importance variables and belief content are mediators of framing effects, as their confidence intervals did not include zero. This reinforces our findings from the path-analysis. Controlling for all mediators, the *direct effect* decreases, but remains significant ($b = .25$, $SE = .05$, $p < .001$).

¹⁰ We used a median split to create groups of high and low political knowledge (e.g., Druckman and Nelson, 2003, p.740).

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