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## FULL PAPER

## The effects of emotional and rational news appeals on political attitudes

### Zur persuasiven Wirkung emotionaler und rationaler Appelle in der Politikberichterstattung

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**Abstract:** The present study investigates how emotional and rational appeals in political news media stories interact with preexisting attitudes in changing citizens' political attitudes. It is hypothesized that news media appeals that match predispositions are more likely to affect attitudes than mismatching media appeals. That is, people holding attitudes primarily based on affect should be more susceptible to emotionally arousing media content than to rational appeals. For people holding attitudes primarily based on cognition, rational appeals in news media are expected to be more persuasive than emotional appeals. These assumptions were tested in a real-world setting in the run-up of a popular vote on immigration. In order to test the hypotheses, the data of a three-wave panel survey were matched with data from a content analysis of the news coverage on the issue. Results indicate the expected matching effects: Voters whose attitudes are primarily based on affect were more likely to change their attitude when confronted with emotional appeals as compared to rational appeals. In contrast, voters holding cognitively based attitudes were more likely to change their attitude when they received rational appeals as compared to emotional appeals.

**Keywords**: Emotionally arousing news, affect, cognition, political attitudes, persuasion

**Zusammenfassung**: In der vorliegenden Studie wird untersucht, wie emotionale und rationale Appelle in der Politikberichterstattung die Einstellungen von Wählerinnen und Wählern verändern. Im Zentrum des Interesses steht dabei, wie die untersuchten Appelle mit bestehenden Einstellungen interagieren. Es wird angenommen, dass Appelle welche eine Passung mit bestehenden Einstellungen aufweisen, eher eine Einstellungsänderung nach sich ziehen als Appelle, die nicht zur Voreinstellung passen. Konkret wird erwartet, dass Personen mit affektbasierten Einstellungen eher durch emotionale als durch rationale Appelle überzeugt werden. Personen mit kognitionsbasierten Einstellungen sollten dagegen eher durch rationale als durch emotionale Appelle überzeugt werden. Diese Hypothesen wurden im Vorfeld einer Volksabstimmung zum Schweizer Asylgesetz in einer Feldstudie getestet. Zu diesem Zweck wurden die Daten einer dreiwelligen Panelbefragung mit denjenigen einer Inhaltsanalyse verknüpft. Die vorliegenden Resultate zeigen die erwarteten Effekte: Primär affektbasierte Einstellungen wurden eher durch emotionale als durch rationale Appelle verändert. Personen mit kognitionsbasierten Einstellungen wurden dagegen stärker von rationalen als von emotionalen Appellen überzeugt.

**Schlagwörter**: Emotionale Nachrichten, Affekt, Kognition, politische Einstellungen, Persuasion

## 1. Introduction

Citizens in a democratic system are assumed to base their attitudes toward political issues and candidates on rational considerations. The media in turn are thought to provide citizens with reliable information in order to make them able to do so (e.g., Esser, 2013; Kühne, 2012). Nonetheless, journalists nowadays frequently present politics using forms and stylistic means that arouse emotions among recipients (e.g., Esser, 2013; Grabe, Zhou, & Barnett, 2001; Jerit, 2004; Mazzoleni, 2008; Vettehen, Beentjes, Nuijten, & Peeters, 2010). Moreover, as a result of "the media's preference for drama and excitement in news reporting" (Jerit, 2004, p. 567), appealing to the voters' emotions is also a popular strategy among politicians and their campaign consultants (e.g., De Castella, McGarty, & Musgrove, 2009; Marmor-Lavie & Weimann, 2005). The resulting trend toward emotional forms of presenting political issues in news media might be problematic. Therefore, media effects research is facing the challenge of investigating the effects of emotionally arousing media content on voters' attitudes and to describe how emotional forms of media coverage affect the citizens' political decision-making. Are emotionally arousing forms of news reporting on politics per se more persuasive than rational forms of news reporting? Under which circumstances do emotional and rational appeals change the citizens' attitudes? Results from experimental persuasion research indicate that the structure of preexisting attitudes moderates an attitude's susceptibility to emotional and rational appeals. Specifically, previous research repeatedly found so-called affective and cognitive matching effects (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). Affective and cognitive matching effects build on the idea that attitudes can be primarily based on either affect or cognition (e.g., Breckler, 1984; Breckler & Wiggins, 1989; Crites, Fabrigar, & Petty, 1994; Trafimow & Sheeran, 1998); and this informational attitude base has been found to interact with emotional or respectively rational appeals in producing persuasion. In concrete terms, previous research found that emotional appeals are more successful in changing affect-based attitudes, whereas rational appeals are more successful in changing cognition-based attitudes (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). However, so far affective and cognitive matching effects have only been demonstrated in experiments, but not in field settings. The present study aims to close this research gap. In doing so, attitude changes in the run-up of a popular vote on a highly restrictive asylum law in Switzerland are investigated. Since news media oftentimes discuss the issue of asylum using frames that arouse emotions among recipients (e.g., d'Haenens & de Lange, 2001), this thematic focus seems particularly well suited to compare the effects of emotional and rational appeals in news media.[1]

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1    In the present article, the term *appeal* is used to describe evidence for or against an attitude object. Rational appeals are to be understood as evidence with low potential to emotionally arouse recipients. In contrast, emotional appeals are to be understood as evidence with high potential to emotionally arouse recipients. This potential to emotionally arouse recipients refers to both, the use of emotionally arousing stylistic means (e.g., arousing language) as well as emotionally arousing content (e.g., referring to crime statistics to present asylum seekers as a safety threat).

In light of the findings from previous experimental research, it is hypothesized that the structure of preexisting attitudes moderates an attitude's susceptibility to emotional and rational appeals in the news. Thus, attitudes and attitude structure are of utmost importance in the present study. Therefore, before the rationale that guides the hypotheses of the present paper is explained in more detail, attitude structure is discussed in the next paragraph.

## 2. Theory

### 2.1 Attitude structure

Attitudes have been defined as evaluative responses to stimuli or attitude objects. That is, attitudes are dispositions to respond to objects, people, ideas, or events (Ajzen, 2005; Breckler, 1984). Regarding the informational bases of attitudes, there is a plethora of studies describing affect and cognition as distinctive components contributing to overall attitudes (e.g., Breckler, 1984; Breckler & Wiggins, 1989; Crites et al., 1994; Trafimow & Sheeran, 1998). The affective attitude-component consists of emotions, feelings, or drives that are engendered by a specific attitude object. In contrast, the cognitive component of attitudes refers to rational evaluations and beliefs about attributes of attitude objects (Breckler & Wiggins, 1989; Crites et al., 1994). Depending on the informational underpinning, attitudes can be classified as either affect- or cognition-based. However, the distinction between affect- and cognition-based attitudes is not a dichotomous one. Rather, all attitudes consist of affect *and* cognition to some extent. Nonetheless, one of the attitude components usually dominates the overall attitude. Thus, attitudes can be classified as being either *primarily* based on affect or *primarily* based on cognition, even if the opposite type of information contributes to the overall evaluation to some minor degree (Breckler, 1984; Breckler & Wiggins, 1989; Edwards, 1990).

### 2.2 Matching effects in persuasion

Matching a preexisting attitudes' structure has been shown to be an effective strategy in persuasion (e.g., Fabrigar & Petty, 1999; Shen & Edwards, 2005; Snyder & DeBono, 1985). This applies not only to affective and cognitive matching effects, but also to a range of similar effects. For example, function matching effects have received much attention in previous studies. Attitudes can serve different functions, such as value-expressive or adjustment and researchers repeatedly found that messages are more persuasive when they directly target the particular functional base underlying the attitude than when they mismatch the functional base of an attitude (e.g., Hullett & Boster, 2001; Petty & Wegener, 1998; Snyder & DeBono, 1985; Wang, 2009). Similarly, previous research revealed value matching effects. That is, persuasion appeals are more successful in producing persuasion when they directly speak to values the recipients consider important (e.g., Schemer, Wirth, & Matthes, 2011; Shen & Edwards, 2005). For instance, Shen and Edwards (2005) found that participants high in humanitarianism reported more attitude change when they were presented with an article emphasiz-

ing the need to provide aid to the disadvantaged than participants low in humanitarianism.

But how and why does matching an attitudes' structure work? When explaining matching effects in persuasion, several scholars refer to dual process theories. According to the Elaboration Likelihood Model of persuasion (Petty & Cacioppo, 1986), variables that are relevant to persuasion such as source attractiveness, arguments, or a match between a persuasion message and the recipients' preexisting mindsets can affect persuasion in four different ways: "(1) by serving as an argument, (2) by serving as a cue, (3) by determining the extent of elaboration, and (4) by producing a bias in elaboration" (Petty & Wegener, 1998, p. 51). Two of these options have been discussed as plausible explanations for matching effects in persuasion. First, it has been assumed that matching appeals determine the extent of message elaboration. In concrete terms, it has been argued that matching messages heighten message elaboration and therefore entail more persuasion than mismatching messages. For example, in the case of function matching effects, Petty and Wegener (1998) found that functionally matching appeals are considered more closely than appeals that mismatch an attitude's function. Even though this explanation has not been empirically validated for affective and cognitive matching effects, it is highly plausible to assume that also affectively and cognitively matching arguments heighten message elaboration. Second, it has been assumed that matching the recipients' mindsets can increase persuasion through a peripheral process (e.g., Petty, Wegener, & Fabrigar, 1997). That is, the match between the message and the structure underlying an attitude serves as a peripheral cue (e.g., "it speaks to my values, so I like it" [Petty et al. 1997, p. 633]). In other words, the substance of a matching appeal does not necessarily have to be convincing. Rather, the mere fact that an appeal targets the structure underlying an attitude can entail persuasion. Therefore, even when processing motivation is particularly low, affectively and cognitively matching appeals should be more successful in changing attitudes than mismatching appeals, simply because they match the informational attitude base, and this match is used as a peripheral cue in evaluating the object in question.

## 2.3 Research on affective and cognitive matching effects

As mentioned above, previous studies repeatedly found affective and cognitive matching effects (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). All of these experimental studies applied a similar procedure consisting of four stages: (1) induction of affectively and cognitively based attitudes toward fictitious attitude objects, (2) first attitude measurement, (3) presentation of an emotional or rational persuasion appeal, and (4) second attitude measurement. For the analyses, the dependent variable attitude change was operationalized as the difference between the first and the second attitude measurement. However, in most of these initial studies on affective and cognitive matching effects, stimulus materials were not comparable to real-world media stimuli. For instance, Edwards (1990) induced attitudes based on affect by presenting participants with subliminal affective primes before confronting them with the attitude object. Ed-

wards and von Hippel (1995) created emotional and rational persuasion appeals by instructing participants to either focus on their emotions or objective inferences when reading a text message. Regarding the external validity of stimulus materials, there is however one exception in previous research: In their second experiment, Fabrigar and Petty (1999) exposed participants with text stimuli that were quite similar to newspaper articles. In the first stage of their experiment, the authors induced attitudes based on either affect or cognition by presenting their participants with text stimuli using either emotional or rational language. The same manipulation was used in the subsequent persuasion stage of the experiment. Using this approach, the authors found affective matching effects along with a non-significant tendency toward cognitive matching effects. More recently, See, Petty, and Fabrigar (2008) investigated affective and cognitive matching effects by measuring *structural attitude bases* instead of manipulating informational attitude bases. Structural attitude bases are conceptualized as a global tendency of individuals to base their attitudes on either affect or cognition. Results by See and colleagues (2008) indicate that emotional and rational appeals matching this trait-like attitude base also produce more persuasion than mismatching appeals.

Consequently, considering the current state of research, one can conclude that affective and cognitive matching effects are stable phenomena. They were demonstrated using various conceptualizations of attitude bases, several attitude objects, and diverse stimulus materials. Among them, there were stimuli that were similar to newspaper articles (Fabrigar & Petty, 1999). Moreover, drawing on dual process theories, it is highly plausible to assume that matches between affective and cognitive attitude bases and emotional and rational appeals heighten persuasion. Therefore, it is hypothesized that affective and cognitive bases of attitudes also moderate the persuasive impact of emotional and rational news media appeals in political communication.

## 2.4 Hypotheses

The present study aims at the investigation of affective and cognitive matching effects in the course of a political campaign. That is, in contrast to previous research, affective and cognitive matching effects are expected to occur in a non-experimental setting using real media content. Specifically, interaction effects between appeal type (emotional vs. rational) and attitude bases (affective vs. cognitive) are hypothesized: Attitudes primarily based on affect should be more susceptible to emotional appeals in news media, while attitudes primarily based on cognition should be more susceptible to rational appeals. Since in political campaigns pro and contra arguments are exchanged, the hypotheses are specified for pro and contra appeals, respectively:

*H1: Pro appeals lead to more approval of the issue in question when they match the attitude base than when they mismatch the informational attitude base. That is, rational (emotional) pro appeals are more likely to increase preference for a highly restrictive asylum law when attitude base is cognitive (affective) as compared to an affective (cognitive) attitude base.*

H2: *Contra appeals lead to less approval of the issue when they match the informational attitude base than when they mismatch the attitude base. That is, rational (emotional) contra appeals are more likely to decrease preference for a highly restrictive asylum law when attitude base is cognitive (affective) as compared to an affective (cognitive) attitude base.*

## 3. Methods

### 3.1 Political context

In December 2005 the Swiss parliament decided to tighten the asylum law. The amended asylum law allowed to directly reject asylum applications of undocumented asylum seekers and to exclude rejected asylum seekers from welfare assistance. Subsequently, a committee composed of the political left, church organizations, labor unions, and human rights organizations launched a referendum so as to avert the implementation of the asylum proposal. In the run-up of the popular vote, conservative and right-wing parties campaigned for the implementation of the restrictive asylum law, whereas the political left opposed the restriction. After a heated political debate, the Swiss citizens rejected the referendum and accepted the amended asylum law with 67.7 percent to 32.3 percent in September 2006.

### 3.2 Panel survey

A telephone-based three-wave panel survey was conducted. The interviews of the first wave took place between July 4th and July 20th ($N = 1\,725$; $M_{age} = 48.51$, $SD_{age} = 17.12$; 47.8% males, 52.2% females). The second wave fielded from August 28th to September 2nd ($N = 1\,415$) and the third wave was conducted between September 25th and 30th ($N = 1\,094$). The respondents were recruited by random digit dialing using a random quota procedure (response rate $RR3 = .59$). The resulting sample was representative for Switzerland's voting public in terms of age, sex, education, and employment status. The survey-data used in the present article have already been used by Schemer, Wirth, and Matthes (2010). In contrast to their publication, the survey-data were combined with content analytic data in the present project.

### 3.3 Content analysis

Between June 2nd and September 24th 2006 – the day the referendum was held – 1 049 newspaper articles and TV reports on the asylum law in Switzerland were coded. These articles and reports stemmed from the media outlets with the greatest reach in the German- and French-speaking regions of Switzerland (Wolling & Wirth, 2012). In concrete terms, the sample consisted of the most important national and regional elite and tabloid newspapers, the main evening news and the

most important political TV broadcasts.[2] All reports on the asylum law referendum from these media outlets were coded. The codebook contained a list of potential appeals in the discourse. This list was created based on campaign material and media reports on the asylum system in general, and coders were instructed to identify the appeals they found in media outlets from the list. When new appeals appeared in the discourse, the list was extended. Using this procedure, the seven trained coders who were blind to the study's goals coded the valence and tone of 3 064 appeals in the selected newspaper articles and TV reports. Regarding the identification of appeals, an inter-coder reliability test based on 20 randomly selected news stories produced satisfactory reliability (*Cohen's κ* = 0.61).

## 3.4 Measures

**Attitude toward asylum law restrictions.** The dependent variable in the present paper is attitude toward asylum law restrictions. Attitude toward asylum law restrictions was measured in three panel-waves using a single item ("*I am in favor of the tightening of the Swiss asylum policy*") on a ten-point rating scale ranging from 1 = *I completely disagree* to 10 = *I completely agree*. The variable produced a sufficiently high test-retest reliability of .88 (wave one and wave two) and .74 (wave two and wave three), respectively.

   **Attitude base.** Following the approach repeatedly used by other researchers, attitude base was measured by separately surveying the affective and the cognitive attitude components (e.g., Breckler, 1984; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). The affective attitude component was measured by asking respondents to which extent they associated the amended asylum law to a series of six emotion words ("*fear*", "*anger*", "*hope*", "*joy*", "*discomfort*", "*excitement*") on five-point Likert scales (Crites et al., 1994). In order to measure the cognitive attitude component respondents were asked whether they agreed with six rational arguments regarding the asylum law ("*Asylum applications need to be processed more efficiently*", "*Asylum applications of undocumented asylum seekers should be rejected without further consideration*", "*Instituting resolute measures in the asylum application process would be ineffective*", "*In the course of processing an asylum application, the fundamental rights of asylum seekers in need to be protected*", "*Abuses in the asylum system should be combatted by introducing restrictive measures*", "*Asylum applications should be processed in any case, even if the asylum applicant could return to a save third country*") on five-point rating scales (Crites et al., 1994). An exploratory factor analysis with oblique rotation confirmed that affect and cognition are distinctive attitude components, as indicated by a two-factor solution with all factor-loadings above .6 (Crites et al., 1994). In a procedure adapted from previous research (e.g., Edwards & von Hippel, 1995;

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2   More precisely, the following print- and TV-media outlets were coded: Blick, Sonntagsblick, Neue Zürcher Zeitung, NZZ am Sonntag, Tagesanzeiger, 20 Minuten, Aargauer Zeitung, Basler Zeitung, Berner Zeitung, Neue Luzerner Zeitung, Die Südostschweiz, St. Galler Tagblatt, Le Matin, Le Temps, Tribune de Genéve, 24 Heures, 20 Minutes, SF Tagesschau, SF Arena, SF Rundschau, TSR Le Journal, TSR Infrarouge.

Fabrigar & Petty, 1999), the respondents' attitudinal base was then assessed for all three panel-waves by subtracting the standardized cognitive index ($\alpha_{Wave1}$ = .77; $\alpha_{Wave2}$ = .82; $\alpha_{Wave3}$ = .84) of the respective panel-wave from the corresponding standardized affective index in the same wave ($\alpha_{Wave1}$ = .73; $\alpha_{Wave2}$ = .72; $\alpha_{Wave3}$ = .72). Thus, negative values on the resulting attitude base index indicate attitudes primarily based on cognition, whereas positive values indicate attitudes primarily based on affect. However, the attitude base index is not dichotomous. Rather, the difference from the scale midpoint (zero) indicates the extent of affective or cognitive dominance in the respondents' attitude base.

In the following analyses, *lagged* attitude base is included as a moderator in the regression model. That is, attitude base assessed in the first wave is expected to moderate the effects of news media reporting between the first and the second wave on attitudes in wave two. Likewise, time two attitude base is assumed to moderate the effects of news media content before wave three on time three attitudes.

**Control variables.** People high in need for cognition (Cacioppo & Petty, 1982) are more likely to base their judgments on extensive rational thinking than people low in need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Moreover, extant research shows that people high in need for cognition are more susceptible to rational than emotional persuasion appeals (Haddock, Maio, Arnold, & Huskinson, 2008). Thus, in order to detect the isolated effects of informational attitude bases, the trait variable *need for cognition* has to be included as a control. Need for cognition was measured using three items (e.g., "*I like solving tasks that require a lot of thinking and mental effort*") on five-point Likert scales ($\alpha$ = .76). Moreover, *political orientation* assessed with a ten-point left-right self-evaluation scale (ranging from 1 = *denotes left* to 10 = *denotes right*), *sex*, *age*, and *education* were considered as additional control variables.

**Appeal valence.** Appeal valence was coded using a four-point rating scale (*strongly in favor, slightly in favor, slightly in disfavor, strongly in disfavor*). The inter-coder reliability test produced satisfactory reliability (*Cohen's κ* = 0.81).

**Appeal tone.** Appeal tone was coded using two five-point rating scales. On a scale ranging from *very rational* to *not at all rational* the coders assessed appeal rationality (*Cohen's κ* = 0.76). On a second scale ranging from *very emotional* to *not at all emotional* the coders assessed appeal emotionality (*Cohen's κ* = 0.87). For example, an appeal referring to the efficiency of the processing of asylum applications was coded as high on the rationality scale, but low on the emotionality scale. Appeals referring to asylum seekers as delinquents who represent a safety threat and spread fear were coded as high in emotionality, but low in rationality. Since two scales were used to assess appeal tone, appeal emotionality and appeal rationality were not per se mutually exclusive and it was still possible for coders to rate appeals as high in emotionality *and* high in rationality. However, the strong negative correlation, $r$(3 062) = -.53, $p$ < .001, indicates that statements high in rationality were low in emotionality and vice versa.

## 3.5 Data analysis

To match the survey data and the content analytic data, respondents were asked to name the newspapers and TV news shows that they used to keep informed about the asylum law referendum. That is, the data were matched on an individual level based on media usage patterns (Wolling & Wirth, 2012). 95 percent of interviewees stated that they relied on at least one of the coded media outlets to learn about the referendum. Based on that information, participants were assigned four values representing the sum of emotionality and rationality ratings for pro and contra appeals on an individual level. More precisely, the respective emotionality ratings for pro appeals were summed up in order to create an emotional pro index, the rationality ratings of pro appeals were summed up resulting in a rational pro index for each participant. Likewise, an emotional and a rational contra index were created for each interviewee. These variables were subsequently used for testing the hypotheses. Therefore, the few respondents who stated that they did not rely on the coded media had to be excluded from the hypotheses tests (Wolling & Wirth, 2012). Similar strategies of matching survey data and content analytic data have been successfully applied in previous studies (e.g., de Vreese, 2005; Matthes, 2008; Schemer et al., 2011). The summated emotional and rational pro and contra indices present counting data. Therefore, they had to be log transformed to adjust for skewness of the distribution (Altman & Bland, 1996). Then, in analogy to the attitude base index, the log transformed rational pro (contra) ratings were subtracted from the log transformed emotional pro (contra) ratings to create a single pro (contra) appeals tone index that represents the dominance of emotional or rational appeals in favor of (opposed to) the asylum law proposal. That is, it is assumed that participants with negative values on the resulting indices were on average less aroused when processing appeals in favor of (opposed to) the amended asylum law than participants with positive values on the appeal tone indices.

## 4. Results

### 4.1 Survey results

Table 1 shows the development of respondents' attitudes in the course of the political debate. On average, respondents' attitudes were in favor of the asylum law restriction in all three waves, as indicated by means higher than the scale midpoint 5.5 (wave one: $t(1\ 711) = 10.42$, $p < .001$; wave two: $t(1\ 406) = 7.32$, $p < .001$; wave three: $t(1\ 085) = 7.36$, $p < .001$). Additionally, as can be seen from table 1, support for the amended asylum law slightly decreased between wave one ($M = 6.21$, $SD = 2.86$) and wave two ($M = 6.07$, $SD = 2.97$). This difference was however not statistically significant, $t(1\ 414) = 1.64$, $p = .10$. Similarly, respondents' attitudes did not differ between wave two ($M = 6.07$, $SD = 2.97$) and wave three ($M = 6.17$, $SD = 3.00$), $t(1\ 093) = 1.00$, *ns.*

**Table 1: Development of respondents' attitudes toward asylum law restrictions over time**

|  | Wave 1 | Wave 2 | Wave 3 |
|---|---|---|---|
| *N* | 1 725 | 1 415 | 1 094 |
| Attitudes toward asylum law restrictions (SD) | 6.21 (2.86) | 6.07 (2.97) | 6.17 (3.00) |

## 4.2 Content analytic results

Table 2 shows the frequency and tone of pro and contra appeals in news media reports.[3] As shown in table 2, appeals speaking against the asylum law restriction occurred far more frequently than pro appeals: 63.6 percent of the appeals were opposed to the asylum law restriction, whereas 36.4 percent of the appeals supported the proposal. Moreover, the number of appeals presented in news media increased over time, suggesting an increase of the intensity of the political debate with the referendum approaching. Results also demonstrate that emotional appeals prevailed in the political discourse on the asylum law. The pro appeals' emotionality ratings ($M = 2.75$, $SD = 1.22$) were significantly higher than the rationality ratings ($M = 2.45$, $SD = 1.17$), $t(1\ 115) = 4.75$, $p < .001$. However, the contra appeals' emotionality ($M = 2.59$, $SD = 1.14$) and rationality ($M = 2.51$, $SD = 1.12$) ratings did not differ, $t(1\ 947) = 1.95$, *ns*. Thus, in line with previous research (e.g., Djupsund & Carlson, 1998; Vettehen et al., 2010), the present data reveal a considerable degree of emotionally arousing media reports in the course of a political debate.

**Table 2: Frequency and tone of pro and contra appeals in news media reports**

| Type of Appeal | Total | Period 1 | Period 2 | Period 3 |
|---|---|---|---|---|
| Number of pro appeals | 1 116 | 129 | 428 | 559 |
| Mean emotionality ratings (*SD*) | 2.75 (1.22) | 3.36 (1.10) | 2.85 (1.22) | 2.52 (1.18) |
| Mean rationality ratings (*SD*) | 2.45 (1.17) | 2.09 (0.88) | 2.13 (1.01) | 2.78 (1.26) |
| Number of contra appeals | 1 948 | 311 | 693 | 944 |
| Mean emotionality ratings (*SD*) | 2.59 (1.14) | 3.09 (1.06) | 2.63 (1.09) | 2.41 (1.14) |
| Mean rationality ratings (*SD*) | 2.51 (1.12) | 2.06 (0.80) | 2.31 (0.99) | 2.80 (1.21) |

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3   On the one hand, table 2 depicts the number of pro and contra appeals. On the other hand, table 2 shows the mean emotionality and rationality ratings of these appeals. The mean values are however not to be confused with the pro and contra appeals tone indices. These indices were used for the subsequent hypothesis test.

## 4.3 Hypothesis Tests

The central goal of the present paper is to investigate attitude change as a function of news media appeals and attitudinal predisposition. In order to determine attitude change, participants were interviewed three times. Therefore, the observations in the data set at hand are not independent, which means that a basic assumption of the general linear model is violated. Thus, since measurement occasions (level one) are nested within individuals (level two) linear multilevel regression modeling is the appropriate method of data analysis (Field, 2005). Due to the relatively large number of level two units, maximum likelihood is selected as estimation procedure (Hayes, 2006). The covariance structure is assumed to be first-order autoregressive because error terms within each individual are correlated but are independent across subjects (Heck, Thomas, & Tabata, 2010).

The fit of multilevel models can only be evaluated in relation to other, simpler models (Heck et al., 2010). Therefore, the regression model is built up stepwise in the following, starting with the simplest possible model (i.e., intercept-only model; see table 3, second column). To determine whether the integration of additional predictor variables enhanced the fit of the model, one compares information criteria such as the -2-Log-Likelihood (-2LL). The -2LL is displayed in smaller-is-better form, which means that the model that produces the smallest value on the information criterion is favored (Heck et al., 2010). In addition, the difference of log-likelihood between nested models can be tested relying on a chi-square test (Field, 2005). Thus, a significance test was carried out for each step of model development. The -2LL for each model as well as results of model comparisons are depicted in table 3.[4]

The coefficients listed in table 3 are unstandardized regression coefficients. Hence, since the predictors were measured using different scales, the coefficients are not comparable in size.

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4   Linear multilevel regression models are referred to by several labels including random coefficient models, mixed-effect models, nested models, hierarchical linear models, or growth curve models (Heck et al., 2010). Usually, multilevel regression modeling is used when data are hierarchically organized. For instance, one can think of students (level one) who are nested in classrooms (level two). The students in one particular classroom might share certain properties because of their socialization and multilevel modeling allows investigating the relationships between individuals and their social groupings. Similarly, multilevel modeling can be applied for the analysis of longitudinal data. In this case, measurement occasions (level one) are nested in individuals (level two). The analysis of repeated measures data using multilevel modeling helps overcoming many of the shortcomings of repeated measures analyses of variance. Specifically, there is no requirement that measurements begin and end at the same time for every individual, measurement intervals are equally spaced, or the number of measurement points is the same between different individuals (Hayes, 2006). Hence, in the present project, interviewees who did not participate in all three panel-waves were still considered in the analyses. The present data were analyzed using IBM SPSS Statistics 22. Entries in table 3 are unstandardized regression coefficients and the predictors included in the analyses all present level one predictors.

**Table 3: Results of a linear multilevel model testing effects on attitudes toward asylum law restrictions**

| Independent Variable | Model 1 Estimates (*SE*) | Model 2 Estimates (*SE*) | Model 3 Estimates (*SE*) |
|---|---|---|---|
| Intercept | 5.99 (.12)** | 4.05 (.50)** | 3.56 (.80)** |
| Sex | | -.35 (.14)* | -.24 (.20) |
| Age | | .01 (.01)* | .01 (.01) |
| Education | | -.20 (.02)** | -.16 (.04)** |
| Left-right self-positioning | | .60 (.03)** | .64 (.05)** |
| Need for cognition | | -.09 (.08) | -.15 (.12) |
| Lagged attitude | | .04 (.01)** | .05 (.01)** |
| Attitude base | | | -.32 (.09)** |
| Pro appeals tone index | | | .16 (.17) |
| Contra appeals tone index | | | .02 (.11) |
| Pro appeals tone index × attitude base | | | .35 (.16)* |
| Contra appeals tone index × attitude base | | | -.42 (.12)** |
| -2 Log-Likelihood | 11 700.61 | 10 641.30** | 3 301.07** |

*Notes*: Entries are unstandardized regression coefficients (standard errors are in parenthesis).
-2 Log-Likelihood is an information criterion suitable for comparisons between nested models displayed in smaller-is-better form. p-Values (*$p$ < .05; **$p$ < .01) refer to differences in -2LL of nested models, e.g., Model 3 fits the data significantly better than Model 2, $p$ < .01.

In the second model in table 3, the demographic control variables (sex, age, and education) as well as political (left-right self-positioning) and psychological (need for cognition) dispositions were included. Moreover, in order to account for stability of inter-individual differences of attitudes over time, the lagged dependent variable was included as a covariate in model two. The decrease in the -2LL indicates that model two fits the data significantly better than model one, $\Delta\chi^2$ (6, $n$ = 1 411) = 1 059.31, $p$ < .001. Moreover, the third column in table 3 indicates that five of the six independent variables are significant predictors of attitudes toward asylum law restrictions. In particular, model two shows that male, older, low-educated, and conservative respondents support the asylum law restriction. Moreover, lagged attitude is a significant predictor in model two. That statistically significant autoregressive effect indicates that attitudes remained relatively stable over time.

In the third model, attitude base and the appeal tone indices (pro appeals tone index and contra appeals tone index) were included as additional predictors. Moreover, in order to test the hypotheses, two interaction terms were introduced to the model in the third step. As can be seen from the -2LL comparison, the third model fits the data significantly better than the second model, $\Delta\chi^2$ (4, $n$ = 1 090) = 7 340.23, $p$ < .001. Thus, the third model generated the best fit among all three models. Considering additional predictors diminishes the influence of sex and age to non-significance, whereas the effects of education, political orientation, and lagged attitude remain stable. Regarding the control variables, it is noteworthy that left-right self-positioning turned out to be a particularly strong predictor of attitudes toward asylum law restrictions. This result reflects the fact that politi-

cally left-oriented people clearly oppose asylum law restrictions, whereas conservatives support a restrictive asylum policy. Self-positioning was even a stronger predictor of attitudes toward asylum law restrictions than was lagged attitude. This might be due to the fact that interviewees had little knowledge about the upcoming popular vote in the early stages of the political discourse. Therefore, their attitudes were less stable than one might expect and lagged attitude – even though highly significant – was not the strongest predictor in the model.

Moreover, the third model reveals a significant effect of attitude base on attitude toward the amended asylum law. This effect can however not be interpreted since it is superimposed by a higher-order disordinal interaction effect (Reinard, 2006).

H1 states that pro appeals should lead to more approval of the amended asylum law when they match the existing attitude base than when they mismatch the attitude base. That is, an interaction effect between the pro appeals tone index and attitude base is hypothesized. As the fourth column in table 3 shows, H1 is supported by a statistically significant interaction effect in the third model. The interaction effect between appeal tone of pro appeals and attitude base is illustrated in figure 1 to facilitate the interpretation of the result.

**Figure 1:** Interaction between attitude base and tone of pro appeals.
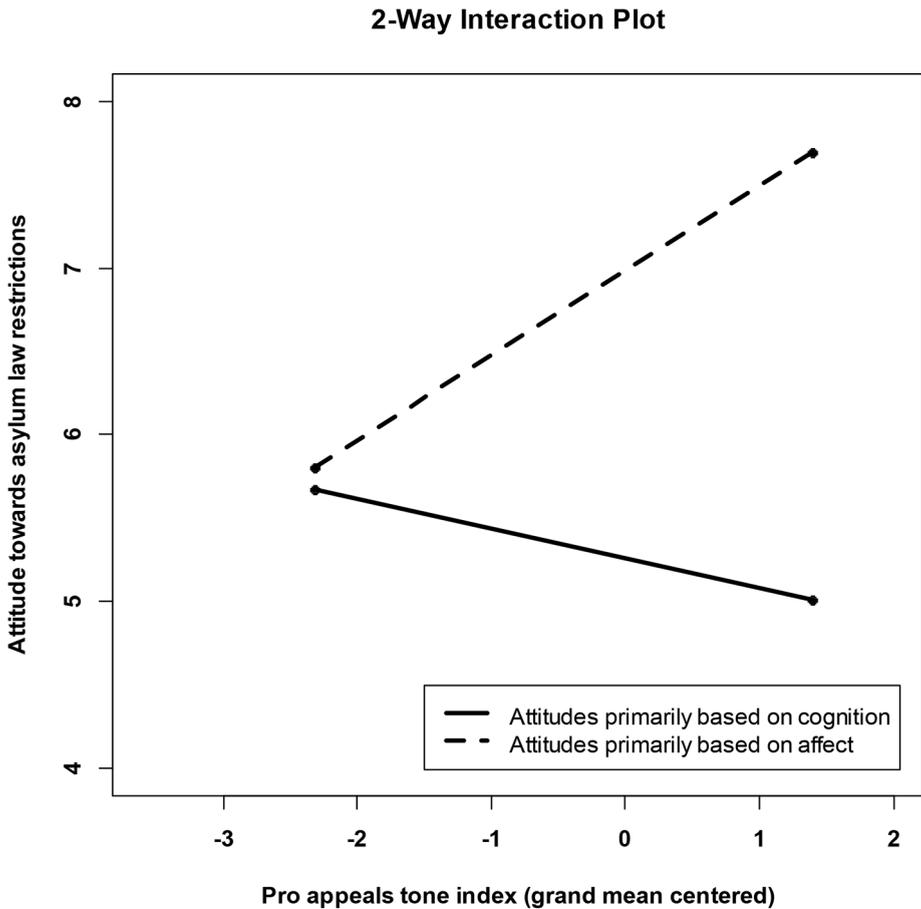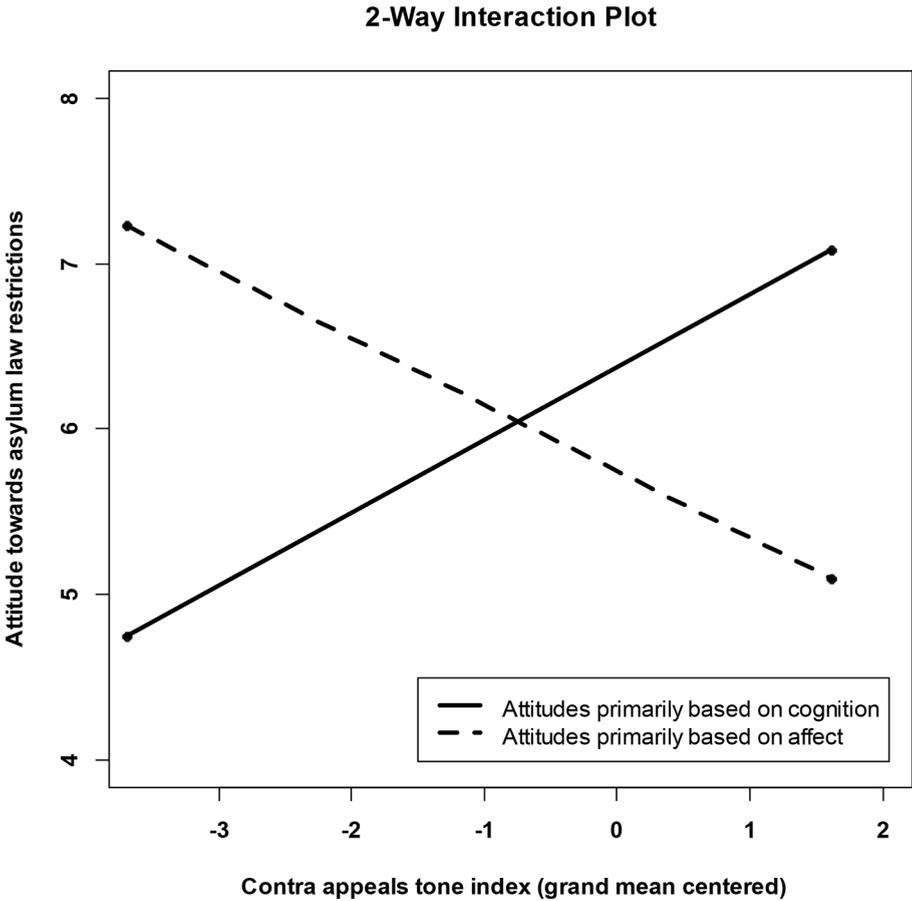
## 2-Way Interaction Plot



*Notes:* The dependent variable, attitudes toward asylum law restrictions, is displayed on the y-axis. Negative values on the pro appeals tone index indicate a prevalence of rational appeals; positive values indicate a prevalence of emotional appeals.

Figure 1 shows that participants who hold attitudes primarily based on affect were more likely to support the asylum law restriction when they predominantly received emotional pro appeals (i.e., positive values on the pro appeals tone index). This effect is confirmed by a significance test of the slope for people holding attitudes primarily based on affect ($z = 2.15$, $p = .031$). This means that interviewees whose attitudes are based more on the experience of emotions than cognitions increased their preference for the asylum law restriction when they were exposed to emotional appeals speaking in favor of the restriction (e.g., appeals focusing on abuse of welfare benefits by bogus refugees) than when they were exposed to frequent rational appeals speaking in favor of the restriction (e.g., appeals that emphasize the need for more cost- and time-efficient asylum proce-

dures). In contrast, there is a tendency for participants holding attitudes primarily based on cognition to support the amended asylum law when the pro appeals they received were predominantly cognitive (i.e., negative values on the pro appeals tone index). The slope for people with a cognitive attitude base is not significant, though ($z = -0.78$, *ns*).

In H2 it was assumed that contra appeals lead to less approval of the asylum law restriction when they match the participants' attitude base than when they mismatch the participants' attitude base. The corresponding interaction is obtained in the third model. Thus, H2 is also supported by the data. The interaction effect between the contra appeals tone index and attitude base is depicted in figure 2.

**Figure 2: Interaction between attitude base and tone of contra appeals.**



**2-Way Interaction Plot**

*Notes:* The dependent variable, attitudes toward asylum law restrictions, is displayed on the y-axis. Negative values on the contra appeals tone index indicate a prevalence of rational appeals; positive values indicate a prevalence of emotional appeals.

Specifically, participants holding attitudes primarily based on affect were less likely to support the asylum law restriction when the contra appeals they received were predominantly emotional in tone (i.e., positive values on the contra appeals tone index). That effect is substantiated by a significant slope ($z = -2.53$, $p = .011$). In addition, participants holding cognitively based attitudes were significantly more persuaded by rational contra appeals (i.e., negative values on the contra appeals tone index) than by emotional contra appeals ($z = 2.78$, $p < .001$). In concrete terms, participants whose attitudes are primarily based on emotions decreased their preference for the amended asylum law when they were confronted with emotional appeals speaking in disfavor of the restriction (e.g., appeals presenting refugees as politically persecuted persons who fear for their life). Interviewees holding attitudes primarily based on rational considerations in turn decreased their preference for the asylum law restriction when they were exposed to rational appeals speaking in disfavor of the amended asylum law (e.g., appeals depicting the amended asylum law as unconvertible).

## 5. Discussion

The present study reveals affective and cognitive matching effects in the context of a real-world campaign. More precisely, affective and cognitive matching effects are demonstrated for both, pro and contra appeals. Hence, it can be concluded that informational attitude bases are crucial for the processing of mediated information. Specifically, based on the present results, it can be assumed that a match between attitude bases and emotional and rational news media appeals increases persuasion by heightening processing motivation or by serving as a peripheral cue. This pattern of results is consistent with previous research on interactions between preexisting attitudes and message tone, showing that messages are more persuasive when the message tone matches the recipients' preexisting mindsets (e.g., Fabrigar & Petty, 1999; Schemer et al., 2011; Shen & Edwards, 2005).

The political discourse on asylum has been particularly emotionalized in recent times. Hence, one might ask which consequences for the citizens' political decision-making arise from this emotionalization. Based on the present results, it can be concluded that emotionally arousing media content is not per se more persuasive than rational content. In point of fact, it is the informational base of preexisting attitudes that interacts with emotionally arousing and rational appeals in producing persuasion. That conclusion might be comforting to the extent that emotionally arousing news media content alone does not appear to be particularly persuasive. Thus, emotional forms of presenting politics in the media do not seem to mislead or even manipulate citizens and do therefore not constitute a threat to the functioning of democratic systems per se. Rather, emotionally arousing news on politically and socially relevant issues persuade voters who already hold attitudes based on affect.

The benefits that are brought forward by the present study are, on the one hand, methodological in nature. Preexisting attitudes have been shown to moderate the recipients' susceptibility to emotionally arousing and rational information under real-world conditions and using real media appeals in the context of a po-

litical campaign. Thus, the present study extends previous results from the field of social psychology using an externally valid research design (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). In addition, by linking content analytic data to survey data on an individual level, an exceptional research design was applied in the current project. That is, instead of solely relying on measures of attitudes and regressing them on measures of media content, specific content analytic data were assigned to each participant.

On the other hand, the present findings extend previous results in two respects. First, in most previous studies affective matching effects along with a non-significant tendency toward cognitive matching effects were reported (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). Contrary to these results, affective *and* cognitive matching effects were obtained in the present study. In concrete terms, rational contra appeals were more successful in challenging attitudes based on cognition than emotional contra appeals. Second, matching effects for pro and contra appeals were observed in the present study. In previous experimental matching studies pro attitudes were induced and then changed into negative by presenting participants with contra appeals (e.g., Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). In contrast, it is demonstrated in the present paper that matching the recipients' informational attitude base is a successful strategy to change attitudes in both directions. Thus, the conclusion that affective and cognitive matching effects are stable phenomena is further substantiated by the results.

However, the present findings should be interpreted within the study's possible limitations. These are associated with the procedure of data matching. Although content analytic and survey data were matched applying a more precise procedure than most other studies, that procedure might still present a limitation of the present results. In concrete terms, it was assumed that interviewees received all of the information depicted by the media outlets they reported to rely on. Thus, the effects of the media variables on attitudes might be overestimated. Future research should replicate the present study taking into account the intensity and frequency of media usage (Wolling & Wirth, 2012). On the other hand, the effects of other communication channels were not considered in the present study. That is, interpersonal communication, minor local news media and the internet are neglected as sources of persuasive information.

Despite these potential limitations, however, the present study brings affective and cognitive matching effects research from the laboratory to the field. Future research should continue to investigate the effects of emotionally arousing news media reporting under real-world conditions in order to further contribute to an understanding of how emotional forms of media reporting influence the citizens' political decision-making in a changing media landscape.

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