Communication, contextualization & cognition: Patterns & processes of frames' influence on people's interpretations of the EU constitution

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IV

Framing Effects

Over the last decades, framing research has provided ample evidence documenting the profound effects frames can exert on the evaluation and interpretation of issues. However, the processes responsible for these effects remain grossly underspecified and contested in the academic debate. The above schematic network theory formulates a range of expectations regarding the cognitive processing of communication frames that can be tested experimentally. As a first step toward investigating the validity and utility of the sketched theory, hence, I will focus on the postulated mechanisms that can account for the widely familiar effects of frames.

IV.1. Expectations

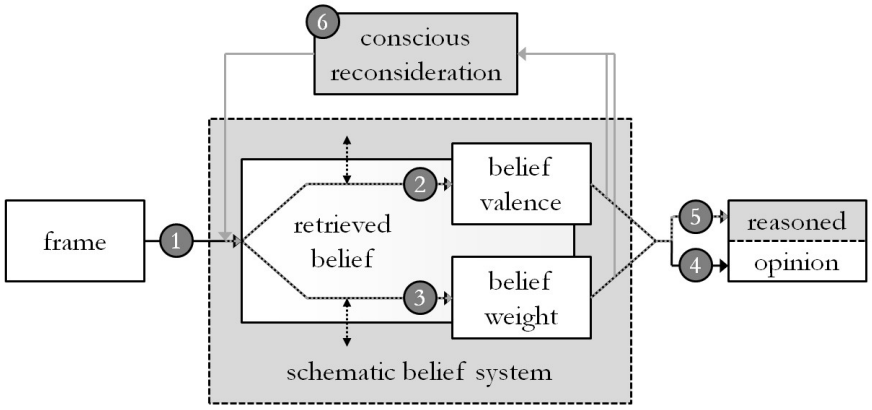
According to the schematic network theory of framing effects, it is necessary to distinguish two times two aspects of a frame's impact upon cognition. First, there is a distinction between subconscious processes driven by the selective retrieval of beliefs and conscious processes that may operate on top of the retrieved information base – if sufficiently motivated. Second, it is necessary to distinguish between the semantic effects raised by the frame, and the evaluative implications of the retrieved semantic information for opinion formation. Both distinctions include a sequential order: Subconscious processing precedes conscious construction (and possible reconsideration), and semantic effects precede evaluation. Since frame-influenced information processing, in most cases, involves both subconscious and conscious stages and induces both semantic and evaluative effects, they can be investigated within the same experimental setup.

Subconscious framing effects

Subconscious processes are primarily driven by activation spreading within the schematically structured knowledge network, as is illustrated in figure IV.1: Frame packages first cue people toward selecting particular beliefs for retrieval based on their interrelatedness and capability to connect the range of tapped cues (*arrow 1*). Based on this belief retrieval effect, however, also the initial values for belief weights as well as evaluative loads are determined: Weights are attributed based on the beliefs' contribution to coherence among the retrieved beliefs, which is achieved by the feedback activation mechanism (*arrow 2*). As regards belief valences, evaluative implications derive from the links established by the retrieved beliefs between the judged object and other concepts with known valence (*arrow 3*). If people do not wish to construct a coherent macrostructure to justify their judgment, an un-reasoned opinion can be formed based on these retrieved, valenced and weighted beliefs without need for conscious intervention (*arrow 4*). Only if people strive to comprehend the reasoning justifying their judgment, also the semantic integration of retrieved beliefs is required, which is necessarily

conscious (*arrow 5, see below*); even then, the central organizing ideas (COI) that are likely to be constructed should be closely constrained by the automatically retrieved information in most cases – i.e., unless the individual is motivated to think deliberately about the issue (*arrow 6*).

Figure IV.1: *The framing process within a schematic belief system*



As a consequence, several testable propositions are raised by the theory. First, the range of beliefs raised by the frame should differ depending on the frame. This effect should be discernable from the belief weighting effect postulated by Nelson *et al.* (1997): When measuring the range of beliefs spontaneously associated after exposure to a frame, the range of beliefs should vary systematically with the frame. Among the beliefs retrieved, subsequently, belief weights should depend on the degree to which a specific belief contributes to coherence among the retrieved set.

H1.1a: If a frame is provided, predominantly frame-related beliefs are retrieved.

H1.1b: Beliefs are credited with the higher importance the more they cohere with other retrieved beliefs.

The above effects, however, should depend on the integration density of schematic knowledge. If knowledge is densely integrated, a frame's capability of directing retrieval toward a particular set of considerations should be limited: Regardless of where activation commences, the well-organized schematic knowledge is likely to quickly direct it toward the core of the schema containing those aspects stored as most important for understanding. By contrast, in weakly integrated knowledge, the cues initiating retrieval exert a much more pronounced influence on which beliefs spreading activation is likely to reach.

H1.2a: In a weakly integrated knowledge environment, the frame's effect on belief retrieval is strong.

H1.2b: In a strongly integrated knowledge environment, the frame's effect on belief retrieval is weak.

The evaluative load of retrieved beliefs should be vested in the person's knowledge. Frames should retrieve differently valences as a function of the retrieved semantic beliefs. Unless the communicated frame gives rise to a *re*-evaluation of beliefs – triggering belief

content change – frames should not change the valence of beliefs, but retrieve different beliefs with different pre-established valences. Their ability to do so should depend on the density of knowledge integration, again: First, since valence retrieval is a function of belief retrieval, and belief retrieval is affected by knowledge density, so are the raised evaluations. Second, in well-integrated knowledge, most beliefs have been considered together, and incoherence has been resolved (Axelrod, 1973). The more disconnected beliefs related to an object are, the more likely will different subsets carry different evaluative implications which can be targeted by communication frames (Brewer *et al.*, 2003).

H1.3a: The valence of the same beliefs is not affected by a frame.

H1.3b: In a weakly integrated knowledge environment, different beliefs carry different valences.

H1.3c: In a strongly integrated knowledge environment, different beliefs carry similar valences.

H1.3d: Differences in the valence of beliefs retrieved by a frame derive from semantically different beliefs.

Conscious frame processing

Framing effects, however, are not limited to the subconscious retrieval of information from knowledge. Whenever information is integrated to form a coherent COI – i.e., a cognitive frame is constructed – conscious processing is inevitable. While the information base of integration may still largely delimit the range of frames likely to be formed, the meaning derived from the set of retrieved beliefs is not fully determined. More importantly, when people are motivated to actively consider the information brought to attention, they may deliberately alter the information base available: They may discount retrieved beliefs, create new links where inconsistencies are detected, and retrieve additional information from memory. Discounting occurs if isolated discrepant beliefs are retrieved. Conscious dismissal hence mainly continues in the same vein as the subconscious assignment of low weights to beliefs that do not contribute to coherence. Inference formation, a form of belief content change, is difficult to predict. However, those cases in which additional knowledge is retrieved allow a number of reasonably clear-cut predictions. The strongest motivation to retrieve additional information is provided when an individual perceives a bias in a frame that disagrees with strongly held predispositions (Huge & Glynn, 2010). It is important to note, however, that strongly held predispositions need not necessarily refer to extreme attitudes: A person may also be deeply convinced that an issue is ambivalent. In this case, frames suggesting clearly univalent judgments (by referring to information consensually considered to be unambiguously positive, or negative, respectively) should be perceived as unduly biased. If a bias is perceived, the individual should be motivated to resolve the imbalance, either by discounting or attempting to counterargue the frame. Particularly the latter involves the deliberate retrieval of additional information that supports the opposite conclusion.[36]

[36] Contrary to the more intuitive option to confront people with extreme attitudes with counterattitudinal frames, this strategy has at least two important advantages: First, if people hold extreme attitudes, they are more likely to simply disregard the counterattitudinal frame, which fails to relate to their beliefs or is perceived as hostile and non-credible (Druckman, 2004; Wegener *et al.*, 2004). If people know that an issue has both pros and cons, any clearly valenced frame should find some resonance and hence be difficult to

A bias is likely to be detected whenever a person's attitudes (and schemata underlying these) are sufficiently densely integrated such that a frame is unlikely to retrieve a univalent set of beliefs. A frame that leaves individuals unaware of other, countervalent attitudes gives rise to a strong, equivalent framing effect. If only few countervalent beliefs are retrieved, they may or may not be discounted, depending on motivation. However, if countervalent beliefs are too many or too salient to be discounted, the frame's bias – or, to be precise, the evaluative difference between the cognitive responses raised by the frame and the considerations retrieved from prior attitudes – is detected (see also Gross & D'Ambrosio, 2004; Slothuus, forthcoming). Given sufficient motivation, further information is accessed, and the frame is counterargued – possibly overcompensating the bias and hence raising a countervalent framing effect.

H2.1a: In an ambivalent knowledge environment, frames pointing at univalent contexts motivate conscious countervalent belief retrieval (resistance or countervalent effect).

H2.1b: In a univalent knowledge environment, frames pointing at univalent contexts do not motivate conscious countervalent belief retrieval (equivalent effect).

Depending on the strength of knowledge integration, this pattern may differ, however: The predicted countervalent response requires densely integrated attitudes, and may break down if knowledge is sparse. In this case, countervalent information may not be found upon conscious retrieval, or the presence of countervalent beliefs may not be brought to attention in the first place. The more well-integrated available knowledge, the stronger is the countervalent effect (Slothuus & de Vreese, forthcoming; Taber & Lodge, 2006; Wegener *et al.*, 2004). As noted above, the density of knowledge integration matters also in the absence of countervalent effects: If integration is dense, the frame is less able to selectively retrieve specific beliefs than in a relatively sparse knowledge environment (Brewer & Gross, 2005; Lecheler *et al.*, 2009; Zaller, 1992). The equivalent framing effect should be the stronger the less well-integrated available knowledge is. Knowledge integration always plays against the frame, weakening equivalent and strengthening countervalent responses.

H2.2a: In a strongly integrated knowledge environment, countervalent belief retrieval is more pronounced than in a weakly integrated knowledge environment.

H2.2b: In a strongly integrated knowledge environment, equivalent belief retrieval is less pronounced than in a weakly integrated knowledge environment.

Finally, also Gross and D'Ambrosio's (2004) notion of a negative emotional response being raised if a frame bias is perceived can be tested. If people believe that an issue is fundamentally ambivalent, the valence raised in response to balanced frames should, ceteris paribus, be more positive than the valence raised in response to both positive and negative frames.

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discount: It must be counterbalanced. Second, if both salient pros and cons of an issue are enshrined in social representations, it is possible to predict that any strong bias will raise suspicion: Even if people have more or less positive attitudes, they know that an entirely univalent view misrepresents the issue. Hence, this strategy saves the trouble of pre-testing people's attitudes (and thereby priming these) or measuring them post-hoc (and hence confounding the opinion formed under the influence of the frame with the baseline attitude).

H2.3: In an ambivalent knowledge environment, frames referring to ambivalent considerations raise more positively valenced beliefs than frames referring to univalent considerations.

Opinion formation as an indirect function of a frame

As a consequence, the effect of a frame on opinion formation is contingent upon both automatic cognitive responses and deliberate information processing, as well as the available knowledge environment. Systematic covariation between frame and judgment can be expected only to the degree that knowledge is (1) semantically diverse, (2) weakly integrated, (3) evaluatively diverse, and (4) the frame successfully exploits the evaluative difference between semantically different contexts – (5) without being detected. So called 'pro'- or 'con'-frames are merely cue sets that have been found to reliably direct most people to retrieve more positively or negatively valenced beliefs than those contexts they normally consider: The specified valence does not derive primarily from the frame, but from people's schematic knowledge, where the cues raise beliefs which *happen to be* mostly uniquely evaluated. Unless the knowledge environment in which the frame operates is specified, however, there is no straightforward way to predict the resulting judgment based on the frame alone. The transmission process of frame effects should be highly nonlinear,[37] showing systematic associations only between immediately successive stages, as illustrated above in figure IV.1: Belief valences and weights depend on belief retrieval within schematic knowledge. The frame alone should be insufficient to predict them – particularly when conscious reconsideration intervenes. Opinion formation depends on belief valences and weights, but it cannot be predicted from the semantic content of beliefs alone.

H3a: The influence of a frame on belief weight and valence is transmitted by belief sampling.

H3b: The influence of belief sampling on reported opinion is transmitted by belief weighs and valences.

H3c: The influence of a frame on reported opinion is transmitted by belief sampling, weighs and valences.

IV.2. Operationalization

In order to assess the impact of knowledge integration, I constructed communication frames cueing comparable contexts relating to two objects differently embedded in personal everyday experience: The first object, the European common currency, is a fact of daily life for all (Dutch) participants. Following heated and lingering debates about its economic and social effects, most Dutch citizens can be assumed to possess a wide range of well-integrated beliefs (Baden & de Vreese, 2008; de Vreese *et al.*, 2001; Kleinnijenhuis *et al.*, 2005; van Gorp, 2007). The other object, EU enlargement, is a far more distant experience for most Dutch. It has been strongly publicized, such that diverse knowledge

[37] The (knowledge-)moderated mediation process can be modelled only to the degree that plausible assumptions allow predicting which schematic beliefs will be retrieved by which cues, and what evaluative loads are thus raised. Implicitly, this is effectively what most studies on the effects of frames do: They use cues which can be plausibly, due to intuitive knowledge of available social representations, expected to raise specific semantic contexts and evaluative beliefs to attention.

can be assumed (Kleinnijenhuis *et al.*, 2005; Schuck & de Vreese, 2006), but the density of knowledge integration should be far lower.

Within the experiment, the manipulation of knowledge ambivalence required for the second set of hypotheses was achieved via the frame manipulation. Relating to both objects, communication frames were created that cued either an economy- or an identity-related semantic context for interpretation. Due to the salience of both aspects in the public debates on both enlargement and EMU, participants could be assumed to be generally familiar with each of the used frames (Gamson & Modigliani, 1987).

Regarding the manipulation of knowledge univalence, arguably, economic knowledge is fundamentally ambivalent: Things always come at a price in economics. People are used to trading off different considerations, thinking about economics in terms of gains and losses (de Vreese, 2010). By contrast, identity-related knowledge is not very ambivalent: Raising, for instance, one's patriotic sentiments to attention does not necessarily also retrieve negative thoughts about one's nation, and vice versa. Somewhat oversimplifying, people mostly either identify with some group, or they do not. Hence, the economy frame is taken to refer to ambivalent knowledge, whereas the identity frame is expected to raise mostly univalent information. Economic knowledge about the euro is assumed to be well-integrated and ambivalent, whereas beliefs about the euro from an identity perspective should be strong as well, but either positive or negative. Likewise, identity-related considerations about EU enlargement should be positive or negative in a weakly integrated knowledge environment, while economic beliefs should be ambivalent and weakly integrated.

Measurement

Since the measured processes are not directly accessible, their measurement requires people to verbalize their thoughts. They need to focus their attention, potentially altering the cognitive state they are supposed to reveal. This is particularly troublesome in the measurement of beliefs activation, ruling out the use of closed questions (Brewer & Gross, 2005). Response latency measures, commonly used in cognitive psychology (Kintsch, 1998; B.T. Scheufele, 2004a; Zeelenberg *et al.*, 2003), suffer from serious validity concerns when applied to more complex communication (however, see Nelson & Willey, 2001) and require that the range of relevant beliefs is known beforehand. The latter is also true for concept-sorting tasks such as those used by Berinsky and Kinder (2006). Likewise, measuring weights by asking participants to rate the importance of listed considerations misses all relevant consideration not included in the list (Nelson & Oxley, 1999). Also, such lists inevitably introduce people to considerations they had not entertained until they were asked. If people then discount absent considerations, this is erroneously recorded as variation in belief weighting, rather than a retrieval failure. For a valid assessment of the proposed theory, measures need to distinguish between the different processes.

For this reason, this study relied on a free association task following exposure to the frame in order to assess the range of retrieved beliefs (Ajzen & Fishbein, 2000; Brewer & Gross, 2005; de Vreese, 2004a; Price *et al.*, 1997; Rhee, 1997; Shah *et al.*, 2001; Zaller & Feldman, 1992). These beliefs, already activated, could subsequently be rated for importance by each participant without confusing the involved processes. However, the gained validity comes at a cost: By asking participants to consider, verbalize and rate their

spontaneous associations after receiving the frame, the procedure leads people to consider their knowledge more deeply than usual. Zaller (1992) has shown that such 'stop-and-think' probes make people more aware of their own stored beliefs, counteracting the framing effect. Fortunately, the dampening should not matter too much for the assessment of the cognitive processes: While the experiment should be biased towards increased consistency with retrieved prior attitudes, in principle the processes should be identical. The used frames' ability to produce significant framing effects has been established in a prior manipulation check ($N=112$, $p<0.001$).

IV.3. Method

Setup

This study uses an experimental design embedded in an online survey. A total of 980 registered members of the ASCoR online panel were contacted by email. Another 393 contacts were added by encouraging participants to invite friends and acquaintances to participate in the study. Out of all contacted persons, 357 participants (Mean age: 23.3, 71% female) completed the entire procedure, resulting in an AAPOR RR1 of 0.26. However, since there is little reason to surmise that the explored cognitive mechanisms might operate in fundamentally different ways across people, sampling was not a prime concern. The experimental stimulus manipulated the density of schematic knowledge by means of varying the issue under consideration (the euro vs. EU enlargement). The manipulation of knowledge ambivalence was achieved through the variation of the semantic context cued. Finally, also the evaluative drift of the frame was manipulated within each context. Seven framing conditions (economy-positive, economy-negative, identity-positive, identity-negative, two mixed conditions, and control) were created within each of the two issue conditions. All variations between the conditions were confirmed by the prior manipulation check (all manipulations significant at .001 level). The difference between higher and lower attitude strength was ascertained again in the main experiment, asking how close and how familiar participants were with the selected issues ($p<0.001$).

Framing manipulation

The frame material was designed to resemble a newspaper article. All framing conditions avoided presenting relevant new information, applying only familiar arguments to either issue. The articles treated distant and unfamiliar countries (Estonia planning to join the Eurozone, Croatia planning to accede to the European Union) and provided only unhelpful (e.g., names of Estonian/Croatian politicians) or common-knowledge information (e.g., the country is small). Thus, the likelihood of framing effects via belief content change was minimized. Both the manipulation of semantic and evaluative cues were achieved by changing the headline and a paragraph within the text (Rhee, 1997). In the economy conditions, implications for trade and industry were highlighted, whereas the identity conditions referred to hopes and fears about national identity and a European society. For the positive conditions, economic actors or popular movements were cited endorsing the EU- or Eurozone accession, and rejecting it for the negative conditions. The frame paragraph consisted of a factual claim about the political or economic situation

and prospects, and quoted a related speaker commenting on the accession plans, using pro- or con-arguments generally familiar in the debate. The mixed conditions combined the abridged framing devices of the pure conditions, referring either simultaneously to economic gains and identity threats, or to positive identification and economic losses. The other parts of the article were identical. The two issue conditions were largely identical as well, exchanging few words only to alter the content. The stimulus material is reprinted in annex IX.1.

Procedure

All participants were randomly assigned to the experimental conditions. After a few demographic questions, participants read the stimulus text. The control groups (one for each issue) started right away without reading an article before. Subsequently, participants were asked to think of the euro, respectively enlargement, in general. This served to invalidate direct use of the little remaining information contained in the texts, retaining only the frame to guide associations. Every respondent was asked to produce at least five, up to ten different associations (M=6.53, SD=1.91), which could consist of up to 20 characters. The task description stressed that this should be done quickly, without deep thinking. On the following page, people were presented with a ten point scale (1=dislike very much, 10=like very much) to rate their own opinion about the euro (M=7.46, SD=1.94) or enlargement (M=6.44, SD=2.29), respectively. Next, they filled in another three to six associations (M=3.76, SD=1.78) thinking of reasons for their opinion (for similar measures of cognitive responses and ambivalence, see Greenwald, 1968; Miller & Peterson, 2004). All together, 3033 entered associations were included in the analysis. Aside of these, a number of control variables (political interest, need for cognition, European identity, and involvement with the issue) were recorded.[38] Expecting large influences of prior knowledge and attitudes upon cognitive responses to frames, it appeared sensible to check explicitly whether randomization succeeded in leveling out differences between conditions.

Coding

For further treatment, all associations were coded with respect to their topic and valence (see also de Vreese & Boomgarden, 2003; Price *et al.*, 1997). Thematic coding occurred in two steps: First, synonyms, circumscriptions and uses of the same word stems were collapsed. Second, all comments were grouped into nine thematic domains, drawing upon the schematic structure of people's EU-related beliefs sketched by Baden and de Vreese (2008, see also chapter VI): Definitional information (defining aspects of the euro (e.g., 'money') or enlargement (e.g., 'Eastern Europe')); Economy (all economy-related thoughts unless coded under Trade or Mobility); Trade (international economic

[38] Political interest: 'Generally speaking, how interested are you in politics?' (6 point scale, M=4.33, SD=1.13), Need for cognition: measured as average score on a ten item four point shortened battery adapted from Cacioppo, Petty, Feinstein, and Jarvis (1996) (M=3.12, SD=0.38); European identity: 'Would you consider yourself...? (Dutch only, Dutch and European, European and Dutch, European only)' (M=1.95, SD=0.71); Involvement with the issue: measured by summed scores on 5 point scales for: 'Are you personally interested in the following aspects of European integration?'; 'How much do you feel you know about these aspects of European integration?'; 'What would you say how close these aspects of European integration are to your personal experience?' (EU Enlargement/The Euro) (M=10.88, SD=2.43)

and financial relations), Mobility (personal ease of movement in Europe in a private, education, or work context), Identity (feelings of belonging, social community, cultural richness and threats), European Union (EU integration, institutions, actors, symbols and legislation), Democracy (EU level democracy and democratic deficit, will of the people), Politics (domestic politics, policy issues, actors, and national power), and Values (evaluations, feelings, norms, and ideals). The topics coded within each domain are listed in annex IX.2.

The valence of comments was determined at the level of collapsed stems and circumscriptions. In a first step, the connotation of the comment's topic was coded: On a scale from 1 (very negative) to 7 (very positive), topics could be negative (2; e.g., 'poverty'), neutral (4; e.g., 'money') or positive (6, e.g., 'welfare'; see annex IX.2). In a second step, explicit qualifications of these topics were considered: For already valenced topics with added emphasis (e.g., 'more poverty', 'better human rights protection') the scale endpoints were coded. If a negative topic was negated (e.g., 'against poverty'), the comment was coded as mildly positive (5), and vice versa (e.g., 'less welfare' would be coded 3, Beukeboom, Finkenauer, & Wigboldus, 2009). Neutral topics could become positive (6) or negative (2) by explicit qualification (e.g., 'practical money', 'ugly money'). Except for the negations which were underrepresented, valence was approximately normally distributed along this scale.

Analysis

To address the first and last blocks of hypotheses, the topic, weight and valence of associations were analyzed within a two-level framework, treating associations as nested within individuals' responses. For these calculations, the mixed conditions were excluded from analysis, partly to better focus on semantic differences, and partly in order to not forestall convergence of the mathematical estimation procedures. Hence, these estimations were based on only 1963 associations provided by 186 participants. The exclusion did not affect the descriptive sample statistics. Three kinds of estimations were computed. First, the effect of the experimental conditions on association-level variables was calculated by multilevel modeling: A multinomial logistic regression predicted associations' probabilities to belong to a particular domain (*arrow 1 in figure IV.1*), and linear regressions assessed whether valences and weights were systematically affected. Intercepts were allowed to vary between individuals, accommodating idiosyncratic preoccupations with different themes. Effects on valences and weights were expected, if present, to be topically dependent, requiring separate estimation for each domain. Second, valences and weights were predicted from the sampling of a person's retrieved beliefs across domains, allowing idiosyncratic variation in the intercepts again. One regression estimated retrieved valences from the range of occurring topics (*arrow 2*). Another predicted belief weights from a) the share of an individual's beliefs from the same domain and b) the belief valence's distance from the person's average retrieved valence (*arrow 3*). Finally, opinion was predicted by linear regression, including both participant level antecedents (frames, controls) and the moderating influences of importance and valence on the level of individual beliefs (*arrow 4*).[39] To assess the

[39] Multilevel designs are not feasible because the dependent variable varies at the participant level and would be perfectly predicted by any random component.

transmission hypotheses, several reduced models were run as well. All estimations were conducted separately and jointly for both issue conditions.

Investigating the hypotheses in the second block, a series of ANOVA- and ANCOVA-designs was utilized. In particular, I first estimated the impact of the experimental factors on association valence as main effects only, to see whether there were any relevant main effects. Next, a full factorial model was tested to estimate the hypothesized contingency of valence framing effects on attitude strength and integration. In addition, the individual effects (*Cohen's d*) of all possible combinations for changing one of the three factors were calculated from the means table. However, since the influence of individual predispositions on association valence should be very strong, I opted to not rely solely on randomized assignment to conditions for control. For this reason, the above ANOVA was re-estimated as ANCOVA, controlling for the four covariates expected to capture most of the influence of idiosyncrasy. The means table was re-estimated, holding covariates constant. Effect sizes were corrected for the influence of the covariates, using Cortina and Nouri's (2000) recommended procedures. Finally, also the predictions derived from the overall mediation process were tested, estimating two more ANCOVAs: The first predicted measured opinion from the three experimental factors and the four covariates alone; the second re-estimated their influence controlling for association valence.

IV.4. Results

Subconscious framing effects

In order to relate the results to those reported by Nelson *et al.* (1997), Slothuus (2008) and others, I will report them in the format of a mediation process.[40] This allows me to highlight the different direct influences before turning toward the overall transmission process postulated in the schematic network theory. All significant influences in both issue conditions are summarized in figures IV.2 and IV.3. Line thickness reflects significance levels; coefficients represent betas or, for the prediction of topic domains, change factors in predicted probabilities. As a point of reference, each domain's predicted probability in the control condition is given below the domain labels. The predicted probabilities if either frame is present are calculated as follows:

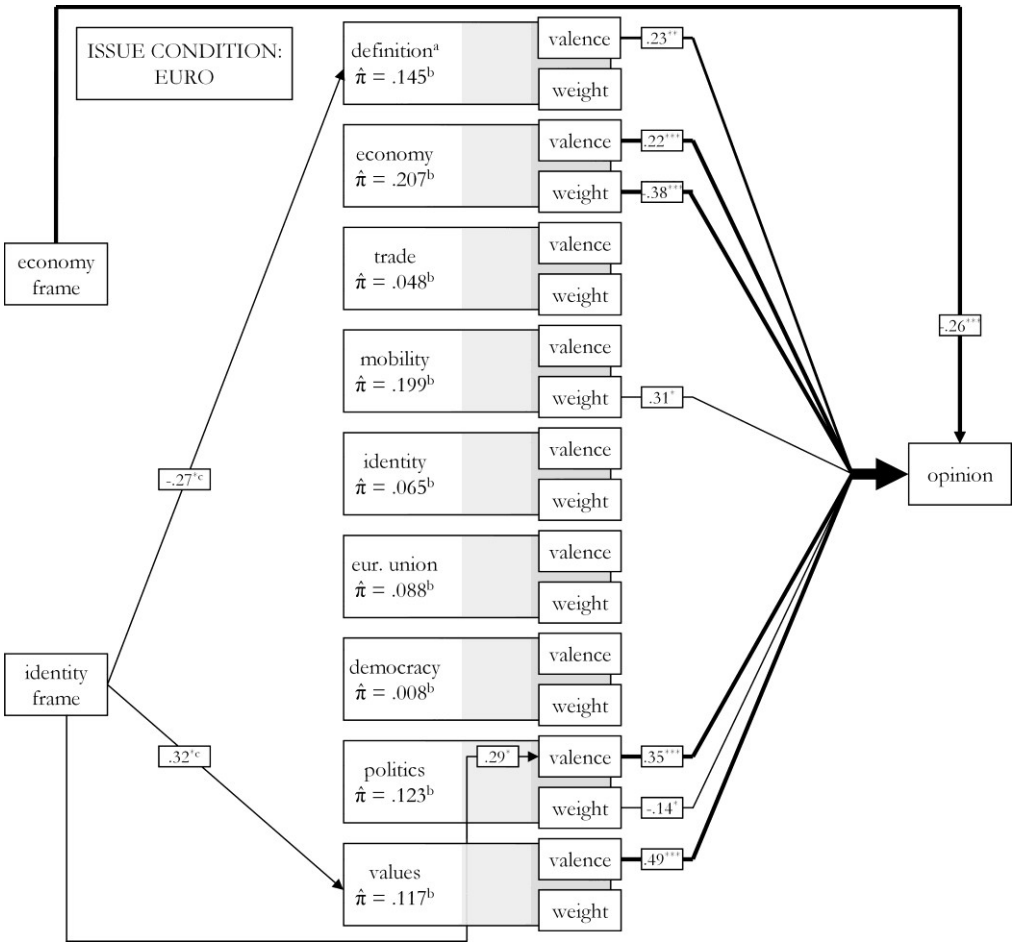
$$pp_{domain,frame} = (1 + \text{change factor}_{domain,frame}) \cdot pp_{domain,control}$$

Belief activation & weighting

As expected, the two conditions show quite different impacts of frames on belief sampling. In the enlargement condition, framing effects reach significance for the majority of domains. Any frame reduces attention for definitional information and retrieves additional considerations pertaining to the economy, trade and identity. Contrary to the expectations from *H1.1a*, *both* frames raise people's awareness of economy- *and*

[40] Note that this mediation process is moderated by the available schematic knowledge (Baron & Kenny, 1986): While influences are transmitted systematically, they are not transmitted in a uniform way across all involved schemata. A frame's influence on valences and weights is moderated by their schematic affiliation. Beliefs' influence on opinion is moderated by their valence and beliefs (Chong & Druckman, 2007c).

Figure IV.2: *Associations about the euro*



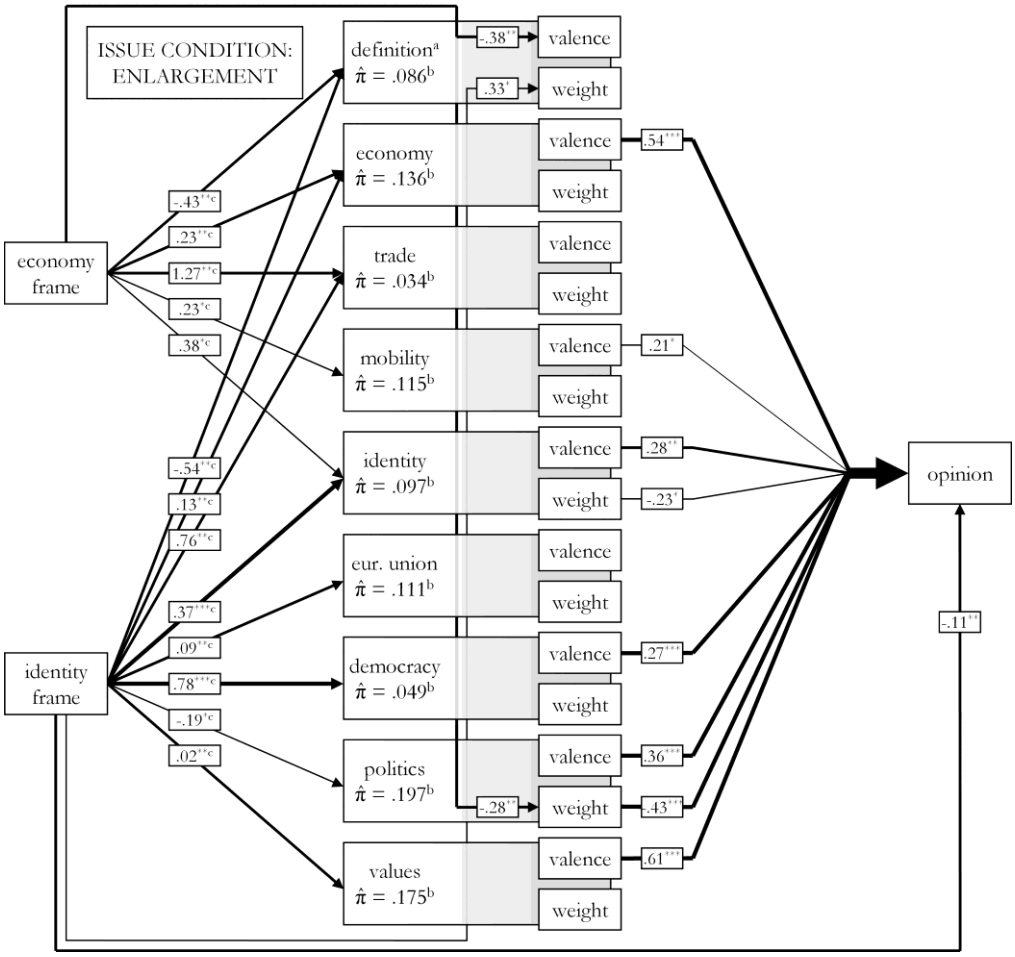
Notes: Significance levels: *** p < .001; ** p < .01; * p < .05.

[a] Predicting opinion, one of the domain dummies carries redundant information. Therefore, topic = 'definition' is omitted as reference category, and cannot show effects.

[b] predicted probability in control condition, all other variables kept at mean

[c] predicted probability change if frame is present (reference category: control)

Figure IV.3: *Associations about EU enlargement.*



Notes: Significance levels: *** p < .001; ** p < .01; * p < .05.

[a] Predicting opinion, one of the domain dummies carries redundant information. Therefore, topic = 'definition' is omitted as reference category, and cannot show effects.

[b] predicted probability in control condition, all other variables kept at mean

[c] predicted probability change if frame is present (reference category: control)

identity-related beliefs. Both domains are too strongly integrated to be retrieved separately; added concern for one also deepens consideration of the other. However, the frames *broaden* the range of thoughts contextually related to the frame: The economic frame raises additional thoughts about personal economic consequences (mobility domain), a theme not directly tapped by the frame, but closely related to it. The identity frame increases attention for EU level political cooperation and democratic representation, at the cost of domestically oriented considerations. It thus extends the frame, adding democratic representation to EU-level social and cultural identity. *H1.1a* holds only partly and must be refined. In line with *H1.2a* and *H1.2b*, the influence of the frame is large only in the enlargement condition, representing weakly integrated knowledge. In case of the euro, competing against people's well-entrenched understandings, only the identity frame retrieves additional beliefs (from the values domain). Aside of this, in both issue conditions, either frame's presence moves people's attention away from definition-related thoughts. This effect is not significant for the identity frame in the euro condition, but there is no significant difference between frames. Variability of responses is large, swallowing most deviations.

In line with *H1.1b*, belief weights are poorly predicted directly by frames: Merely two out of eighteen possible effects in figures IV.2 and IV.3 are significant, just around chance level. Instead, belief weights were predicted from the sampling of a person's total retrieved beliefs. The results are presented in table IV.1. Both semantic and evaluative coherence contribute about equally to the prediction of belief importance. Furthermore, the combined model shows that these are not two aspects of the same, but actually two independent weighting criteria.

Belief valence

In line with *H1.3a*, valences within the same domain are unaffected by the frame: The results in figures IV.2 and IV.3 show only two (out of 18, just above chance level) systematic effects on belief valences: Thoughts on domestic politics are more positive if an identity frame is applied to the euro, and enlargement is less favorably defined if framed in terms of economy. Systematic valence differences, instead, are found between the domains, and between individuals, of course. As expected by *H1.3b* and *H1.3c*, a factorial ANOVA (not shown) shows that, once idiosyncratic factors are accounted for, valence differs significantly between domains only in the enlargement condition. Still, the sampling of beliefs predicts the average valence of a person's beliefs on the euro better on EU enlargement, as is shown in table IV.2: Valence depends on the beliefs sampled, and not on the frame. As for the euro, valence is the more positive the more people consider the effects of the common currency on traveling and personal economic opportunities. If the general economy is more in focus, evaluations are less favorable. As for enlargement, evaluations become more positive whenever domains other than definitional information (the reference category), the EU and its democratic state are tapped. The implications of EU enlargement are mainly charged positively, its political-institutional side is seen more negatively. *H1.3d* is supported.

Table IV.1: *Prediction of belief importance from semantic & evaluative coherence among retrieved beliefs*

	model 1: similar schema	model 2: similar valence	model 3: both effects
	beta	beta	beta
frames			
economy	n.s.	n.s.	n.s.
identity	n.s.	n.s.	n.s.
other predictors			
issue (enlargement)	0.168 ***	0.154 ***	0.169 ***
share of beliefs from same domain	0.090 ***		0.097 ***
distance from average valence		0.090 ***	0.098 ***
Pseudo-R^2	0.204	0.208	0.214
reduced model: random intercept only			
Pseudo-R^2	0.199		
N / groups	1963 / 186	1963 / 186	1963 / 186

Note: *** p<0.001

Conscious frame processing

Turning toward the deliberate manipulations of frame-retrieved considerations, the first striking, yet not unexpected finding is that the most positive response is raised by conditions that were not positively framed: Mean association valences are significantly more positive than in the control condition for the negative economic framing conditions (discussed below) as well as the mixed conditions. The main effect of the mixed condition is the only one that is consistently significant, both compared to the control group and to the grand mean. *H2.3* receives considerable support.

By contrast, the main effects of positive and negative valence as well as economic and identity framing are not nearly as clearly cut. An ANOVA testing only the three manipulated factors' main effects shows that none explains much variance. Both the framing and valence manipulations remain non-significant, and the issue manipulation is weak. A closer investigation of mean association valences across conditions reveals that there is a strong interaction effect between framing and valence, which is fully in line with *H2.1a* and *H2.1b*: Within the identity conditions, more positive framing is associated with more positive cognitive responses (*Cohen's d*=0.121, p<0.1). Within the economy conditions, however, there is a significant countervalent effect (*Cohen's d*=0.268, p<0.001). A comparison across issues shows that the interaction is strongly present in both issue conditions, but it is differently pronounced: For EU Enlargement, both effects are significant, the equivalent framing effect in the identity condition (d=0.242, p<0.01)

Table IV.2: *Prediction of belief valence from the topical range of sampled beliefs*

	2-level model: beliefs within participants	
condition	euro	enlargement
	beta	beta
frames		
economy	n.s.	n.s.
identity	n.s.	n.s.
domains[a]		
economy	-0.186 **	0.214 **
trade	n.s.	0.170 **
mobility	0.590 ***	0.270 ***
identity	n.s.	0.209 **
eur. union	n.s.	n.s.
democracy	n.s.	-0.119 *
politics	n.s.	0.263 ***
values	0.273 ***	0.428 ***
pseudo-R^2	0.325	0.313
reduced model: without frames		
pseudo-R^2	0.325	0.313
reduced model: without domains		
pseudo-R^2	n.s.	n.s.
reduced model: random intercept only		
pseudo-R^2	0.131	0.238
N / groups	1010 / 101	953 / 83

Notes: *** p<0.001; ** p<0.01; * p<0.05
[a] reference category: definitional information

being somewhat larger than the countervalent effect in the economy condition (d=0.189, p<0.1). For the euro, the countervalent effect is large and significant (d=0.356, p<0.001) in the economy condition, while there is no significant effect in the identity condition. As expected in *H2.2a* and *H2.2b*, stronger attitudes boosted the countervalent effect and dampened the equivalent one. The interaction effect of valence and framing is by far the strongest factor in the full factorial ANOVA, as shown in table IV.3: Depending on whether an economic or identity context is tapped, the effects of positive and negative frame valence on association valence differ dramatically. R squareds remain low, reflecting the large variance introduced by idiosyncratic predispositions.

In order to control for undesirable influences of not perfectly random distributions of these highly influential idiosyncratic factors, the model was re-estimated as an ANCOVA, controlling for the relevant covariates. The ANCOVA – shown in annex IX.3 – reveals only minor changes: The explanatory power of the issue condition main factor moves towards the issue-valence-interaction, which advances to be the second strongest factor

behind the frame-valence interaction. The valence condition main effect gains significance, but remains weak. The covariates extract about twice as much variance as the experimental manipulation, reflecting the importance of idiosyncratic predispositions. Analyzing the effect sizes between the re-estimated means holding the covariates constant, the same pattern as before reappears. Some effects are slightly smaller, but almost all effects remain significant. No significant or even near-significant effect changes in direction. Only the equivalent effect in the identity framing condition loses significance. Thus, also after controlling for the covariates, the hypotheses remain accurate descriptions of the patterns found in the data. Across both issues, the negative economy framed condition yields the most positive responses, followed by the positive identity framed condition. On enlargement, the negative identity frame raises the strongest negative response, whereas the positive economic frame does the same in case of the euro. All means and effects are shown in table IV.4.

Table IV.3: *ANOVA predicting mean association valence from experimental conditions, full factorial*

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model[a]	102.245	11	9.295	4.377	0.000
Intercept	49933.798	1	49933.798	23516.131	0.000
Main Factors					
framing condition	1.451	1	1.451	0.683	0.408
valence condition	4.696	1	4.696	2.212	0.137
issue condition	8.916	1	8.916	4.199	0.041
Interaction Factors					
framing · valence	28.002	1	28.002	13.187	0.000
valence · issue	12.291	1	12.291	5.788	0.016
framing · issue	9.444	1	9.444	4.448	0.035
framing · valence · issue	0.582	1	0.582	0.274	0.601
Error	6414.746	3021	2.123		
Total	62306.000	3033			
Corrected Total	6516.991	3032			

Note: [a] R Squared = 0.016 (Adjusted R Squared = 0.012)

Table IV.4: *Mean association valence and differences between conditions*

		issue condition: euro				issue condition: enlargement				total			
		positive	*Cohen's d*	negative	total	positive	*Cohen's d*	negative	total	positive	*Cohen's d*	negative	total
economy	M	**4.027**	→	**4.415**	**4.221**	**4.208**	→	**4.561**	**4.385**	**4.118**	→	**4.488**	**4.303**
	SE(M)	0.115	*0.275*	0.095	0.075	0.103	*0.250*	0.129	0.083	0.078	*0.257*	0.079	0.056
	SD	1.442	***	1.451	1.470	1.445	*	1.460	1.493	1.453	***	1.503	1.481
	N	156		231	387	195		129	324	351		360	711
	Cohen's d	↓ *0.177* *		↓ *n.s.*	↓ *n.s.*	↓ *n.s.*		↓ *-0.397* ***	↓ *-0.191* **	↓ *n.s.*		↓ *-0.212* ***	↓ *n.s.*
identity	M	**4.276**	→	**4.373**	**4.325**	**4.226**	→	**3.993**	**4.109**	**4.251**	→	**4.183**	**4.217**
	SE(M)	0.105	*n.s.*	0.106	0.075	0.104	*n.s.*	0.100	0.072	0.074	*n.s.*	0.072	0.052
	SD	1.449		1.452	1.460	1.447		1.471	1.464	1.444		1.453	1.444
	N	190		187	377	192		217	409	382		404	786
total	M	**4.152**	→	**4.394**	**4.292**	**4.217**	→	**4.277**	**4.248**	**4.184**	→	**4.336**	**4.289**
	SE(M)	0.078	*0.170*	0.072	0.040	0.074	*n.s.*	0.082	0.042	0.053	*0.106*	0.054	0.027
	SD	1.451	**	1.467	1.585	1.447		1.528	1.619	1.447	**	1.483	1.487
	N	346		418	1551	387		346	1482	733		764	3033

	control	mixed	control	mixed	control	mixed
M	**4.225**	**4.435**	**4.181**	**4.318**	**4.203**	**4.377**
SE(M)	0.092	0.063	0.097	0.063	0.067	0.044
SD	1.442	1.466	1.441	1.446	1.444	1.446
N	246	541	220	529	466	1070

Notes: Shaded means differ significantly from the control group mean. Significance levels: */ p < .1; **/ p < .05; ***/ p < .01
Covariates kept constant at their means: eu identity = 1.95, issue involvement = 10.88, political interest = 4.33, need for cognition = 3.12.

From framing effects to opinion change

Turning toward the transmission process leading up to opinion formation, the prediction was that each stage is predicted well only by the immediately preceding stage: Frame conditions affect belief retrieval, belief retrieval affects weights and valences, and these finally determine reported opinion. The consistently non-significant direct contributions of the framing conditions shown tables IV.1 to IV.3 offer support for *H3a*: Belief valences and weights depend on the constellation of sampled beliefs, and only indirectly, in no uniform way, on the provided frame.

Predicting opinion, the full model shown on the right hand side of figures IV.2 and IV.3 includes frames, sampled beliefs, valences, weights and controls. The set of retrieved beliefs shows no direct effects. They are only indirectly relevant, supporting *H3b*: If beliefs from a particular domain are activated, the attached evaluative loads and importance ratings contribute the bulk to the prediction of reported opinion. Unsurprisingly, positive valences as well as increased weights for positively evaluated domains (such as the mobility domain in case of the euro) boost supportive opinion formation. Conversely, discounting the negatively charged economic beliefs about the euro, or identity- and domestic politics-related beliefs about enlargement feeds more positive opinions. Taken alone, valences account for 5% (euro) and 14.5% (enlargement) of variance in reported opinion on top of the shares explained by the controls (14.5% for the euro and 8.2% for enlargement). The influence of belief weights is clearly smaller with 1.9% and 4.7%, respectively. In line with *H3c*, the direct influence of the framing condition is secondary as well, but rather stable: Incremental R squareds shrink only from 7.1% and 2.3% to 6.6% and 1.5%, respectively, if the other predictors are added. Only one effect – the economic frame boosting support for EU enlargement – loses significance. The full process model explains 30.9% (enlargement) and 30.1% (euro) of variance in opinion.

The ANCOVA presented in table IV.5 includes also the mixed conditions excluded from the test of semantic effects. Corroborating the above findings, the main effects of the frame and valence conditions alone explain less than a percent of the variation in opinion. The frame manipulations are non-significant, only the issue factor is relevant on its own (η^2=0.072, p<0.001). In the full factorial model, the overall explanatory power doubles: the frame-valence-interaction (η^2=0.021, p<0.001) as well as the frame-issue-interaction (η^2=0.026, p<0.001) are significant, while the influence of the issue alone drops to an eta-squared of 0.048 (p<0.001). The direct unmediated effect of the experimental conditions on opinion explains about 14.1% of variance.

When association valence is controlled for, the direct influence of the experimental factors is clearly reduced. Taken as sole predictor, association valence explains 9.8% of variance in reported opinion. Predicting opinion from experimental condition, association valence and the four covariates, the ANCOVA shows that the explanatory power of association valence is more than double as large (η^2=0.079, p<0.001) as the contribution of the second strongest predictor, the issue condition (η^2=0.035, p<0.001). Obviously, association valence captures the cognitive effect of the framing conditions imperfectly, leaving some explanatory power to the three experimental factors (the full factorial model contributes η^2=0.091). Thus, the total explanatory power of the experimental conditions

drops by about a third. All taken together, about a quarter of variation in opinion is accounted for, the bulk of which is credited to the immediately preceding stage, namely, association valence.

Table IV.5: *ANCOVA predicting opinion from association valence and experimental conditions*

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model[a]	3719.121	16	232.445	66.781	0.000
Intercept	717.041	1	717.041	206.004	0.000
Covariates					
association valence	897.125	1	897.125	257.741	0.000
eu identity	170.364	1	170.364	48.945	0.000
issue involvement	201.289	1	201.289	57.830	0.000
political interest	17.745	1	17.745	5.098	0.024
need for cognition	92.381	1	92.381	26.541	0.000
Main Factors					
framing condition	0.218	1	0.218	0.063	0.802
valence condition	60.838	1	60.838	17.479	0.000
issue condition	375.687	1	375.687	107.934	0.000
Interaction Factors					
framing · valence	171.825	1	171.825	49.365	0.000
valence · issue	313.838	1	313.838	90.164	0.000
framing · issue	0.022	1	0.022	0.006	0.937
framing · valence · issue	62.828	1	62.828	18.050	0.000
Error	10497.863	3016	3.481		
Total	162736.000	3033			
Corrected Total	14216.984	3032			

Note: [a] R Squared = 0.262 (Adjusted R Squared = 0.258)

IV.5. Discussion

The above findings present strong evidence in favour of a framing effect which can be separated into a semantic and an evaluative stage: Frames primarily affect the semantic information retrieved. The notorious capability of frames to shift opinion is mostly a consequence of the semantic effect, and hence only an indirect effect of the frame (Brewer, 2001; Kim & Rhee, 2009; Rhee, 1997). Both effects, however, are strongly dependent on the schematic and attitude structure of the framed person's mind.

With regard to the semantic effect, the above experiment has supported the propositions made by the schematic network theory regarding the retrieval of beliefs: First of all, different frames retrieve different beliefs. The information base of framed cognition is anything but stable. Second, the cognitive response raised by the frames showed both frame-independent considerations – belief sets retrieved from prior knowledge under any circumstance – and frame-susceptible considerations. As theorized, the cues presented by the stimulus interact with engraved knowledge, directing activation in specific directions but not determining retrieval all the way. Most notably, communication frames did not only retrieve beliefs from the very domains they targeted – which were always retrieved – but from adjacent, thematically closely related domains. This unanticipated finding further bolsters the schematic network theory: As the frame channels additional activation toward an already highly accessible schematic structure, more activation spills over toward overlapping and adjacent schemata (Price *et al.*, 1997). The observation hence not merely reflects the semantic bias in belief retrieval, but also the spread of activation toward other schemata according to semantic relatedness (Kintsch, 1998). Belief sampling, contrary to Zaller (1992), is decidedly non-random: It reflects stored relevance judgments engraved into schematic knowledge (Berinsky & Kinder, 2006; Rhee, 1997).

With regard to the evaluative effect, it has been shown that the valence of cognitive responses cannot be explained by the frame alone. Valences were rooted in the pre-established evaluations of retrieved knowledge, and hardly at all changed by the frame. Frames that succeeded in tapping schemata carrying the anticipated valence induced the expected equivalent effect on opinion. However, in accordance with theoretical expectations, several tested framing conditions failed to deliver their evaluative bias: First, in the presence of strong, well-rehearsed attitudes, frames largely failed to shift belief retrieval, and consequently, to affect opinion, as well (Brewer & Gross, 2005; Gross, 2000; Tourangeau & Rasinski, 1988). Second, some frames raised semantically different considerations, but these considerations carried valence no different from unframed judgments. Finally, some frames that suggested univalent considerations were perceived as unduly one-sided by participants and retrieved a countervalent cognitive response: Reported opinion was shifted *away* from the stance suggested by the frame.

In the perspective taken by the schematic network theory, these results underline several important distinctions that have often been overlooked in the framing literature: Most notably, the evaluative effect of frames is dependent on, but not fully determined by the semantic effect: While an evaluative effect without a change in the underlying

information base is difficult to imagine,[41] profound semantic changes may make no difference at all for reported opinion, or even imply a countervalent judgment (Chong & Druckman, 2007a; Gross, 2000). In order to understand the effects of communication frames on opinion, we first need to understand the frames' effects on semantic belief retrieval.

The evaluative loads summoned by a frame derive from those evaluations stored in an individual's prior attitude structure, the communicated frame (if a message induces people to re-evaluate prior beliefs, triggering belief content change), as well as appraisals of the current situation (Ortony, Clore, & Collins, 1988; Roseman, 1991). The frame is merely one, and rarely the most important source of evaluative loads. The insignificance of frame-provided evaluations in the above experiment is illustrated by the near absence of frame influences onto the evaluation of specific domains. If the frame dominated the attribution of valence to the same beliefs, domains would hardly be evaluated identically across all conditions.

The importance of situation appraisals has been underlined by the disproportionally positive response to the mixed framing conditions. According to Rucker and colleagues (2008), people evaluate messages more positively when they gain the impression that the author's has strived to give fair consideration to both pros and cons about an issue. While their experiment impressively supports this prediction, I am not convinced that the explanation holds also in political communication: People may actually welcome a certain bias, and resent efforts – for instance, by journalists – to balance opposing arguments against one another.[42] The schematic network theory provides a different, more flexible explanation based on a perceived mismatch between frame and cognitive response (see also Huge & Glynn, 2010; Johnson *et al.*, 2004; Wegener *et al.*, 2004). In line with Gross and D'Ambrosio's (2004) argument, frame-resonant cognitive responses raise a positive affective response, coloring retrieved information in a brighter light. Unlike the explanation advanced by Rucker et al, this view does not preclude that people may appraise balanced statements in one, and pointed ones in another context – depending on the structure of their retrieved attitudes.

Among the sources of evaluative beliefs, prior attitudes are clearly the most influential one – reflected in the large variability of domain evaluations across participants. People can easily follow the semantic drift of a message but totally disagree with the judgment it advances (Sapiro & Soss, 1999). The range of sampled beliefs across domains predicted opinion only after the valence attributed to these by each individual was taken into account. Frame effects on opinion can only be understood against the backdrop of the attitude structure they target in people's minds. This is most clearly so when people actively consider the information brought to attention by the frame and revisit their knowledge to amend the automatically retrieved set of beliefs. Not only the semantic and

[41] This requires that a frame changes the evaluation of the same retrieved cognitions (*belief content change*, Slothuus, 2008) without reference to any new or otherwise unconsidered information. Contrary to intuition, equivalence framing effects (i.e., framing effects raised by different presentations of precisely the same information) do not meet this requirement: The expression '200 lives will be saved', for instance, raises quite different associated beliefs than '400 people will die' (out of 600 infected with the infamous Asian flu, Tversky & Kahneman, 1981). Even though the *communicated* information is equivalent, also equivalence framing rests on the retrieval of different *associated* beliefs.

[42] This finding has become known as the 'hostile media effect' (Huge & Glynn, 2010).

evaluative information that can be activated upon retrieval depends on the structure of engraved knowledge, but also what further knowledge can be found when sought. Gross frame biases went undetected, delivering their evaluative loads, when knowledge was insufficiently well-integrated to bring countervalent attitudes to attention. Where dense and well-integrated knowledge competed with the frame over the direction of belief retrieval, biases were detected and either resisted or actively counteracted. In line with the schematic network theory, dense knowledge integration always operates against the frame, facilitating resistance and fuelling attempts to counteract the frame (Nelson *et al.*, 1997). However, this must not be confused with the *amount* of knowledge available (Druckman, 2001, 2004; Lecheler *et al.*, 2009; Shah *et al.*, 2010; Willnat, 1997): Limited, but well-organized knowledge structures – such as ideological convictions or salient online attitudes – may easily resist frames (Chong, 1996; Matthes, 2007). The prototypical frame victim holds a wide range of rich and differentiated, only locally connected, differently valenced attitudes without subscribing to any of them in particular (Tewksbury & Scheufele, 2009) – journalists, but also academics are likely examples. The more knowledge is available, the more demanding becomes the task to integrate all relevant beliefs such that frames cannot easily direct activation away from them.

Limitations

This study is subject to several limitations. First, the measurement of retrieved beliefs interrupts the cognitive process underlying the framing effect (Zaller, 1992), inducing several predictable, but undesirable changes in people's response behavior (Raaijmakers & Shiffrin, 1981; Zaller & Feldman, 1992). Belief retrieval should be more exhaustive and attitude-consistent than normally expected, dampening the effect of framing (Fiske *et al.*, 1983; Tourangeau & Rasinski, 1988; Zaller & Feldman, 1992). The broad variety of associations, including trivial and obscure ones, assures me that respondents did indeed associate spontaneously (Schaap, 2006). Nevertheless, verbalization and, in particular, typing into an online form inevitably filters out some, potentially systematically different considerations. However, there is no way of recording belief retrieval that fully avoids this problem. Thus, in my view, the above procedure presents a defensible compromise.

Second, the selected operationalization of densely and sparsely integrated knowledge, ambivalent and univalent political attitudes is not unproblematic, either. While well-grounded in psychological theory and the literature on EU attitudes and crudely corroborated by measuring issue familiarity in the manipulation check, the named properties of participants' knowledge have been assumed, not ascertained (Graber, 1988). Moreover, assumptions about peoples' belief structures are necessarily stochastic, and apply to individual participants in different degrees, if at all. Given the relatively weak institutionalization of European political discourse in the Dutch public, the assumption that attitudes are formed in largely similar ways may be heroic – even though the results presented in chapter VI below lend considerable credibility to this claim. Although I judged this to be too invasive and feared priming respondents, controlling directly for attitude strengths, integrations, and valences would be desirable (Kuklinski *et al.*, 1992; Price & Tewksbury, 1997; Tourangeau & Rasinski, 1988).

A third limitation presented by the experimental setup lay in the confounding of evaluatively balanced with semantically mixed framing conditions. As a consequence, it is not possible to decide whether the positive response derived from the frames' evaluative

balance (as theorized, Gross & D'Ambrosio, 2004; Rucker *et al.*, 2008), their semantic multifacetedness, or both. Fortunately, this omission can be easily redressed in future research.

In summary

In summary, the above study has lent considerable support to the schematic network theory of framing, supporting in particular three of its central propositions: First, it corroborates the view that frame effects are primarily semantic effects, and only indirectly affect evaluative judgment. In line with the predictions of cognitive appraisal theory, evaluations are based on retrieved beliefs, and only indirectly on the frame – if at all (Ortony *et al.*, 1988). Second, it demonstrates the ability of the schematically structured, accessibility-based spread of activation to account for the retrieval of semantically related associations also beyond those beliefs explicitly referred to. The effect of the frame is neither confined to the priming of directly tapped beliefs, nor restricted to a mere alteration of belief weights among a stable set of considerations (Rhee, 1997; Shen, 2004). Relating back to the first point, different evaluations of a differently framed object rest not on a change in the same beliefs' evaluative loads, but on the retrieval of different beliefs: When using different frames for evaluation, people evaluate different properties or aspects of the same object, without necessarily changing or contradicting prior judgments. Third, the above experiment underlines the centrality of the interaction between communicative stimulus and the cognitive environment, namely, the prior schematic knowledge structure. Since communication frames primarily refer to beliefs already present in a person's mind, the belief structure (facilitating or hindering the retrieval of related beliefs) and attached evaluations (retrieved alongside the beliefs) immediately affect the result of frame processing (Cohen & Kjeldsen, 1987; Tourangeau & Rasinski, 1988). Even if people closely follow frames presented to them in communication, their prior knowledge and attitudes inevitably informs, and transforms, the meaning and judgment they derive from the communicated messages.