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**SEMANTIC ASSOCIATION & WEIGHTED CONSIDERATION:
HOW FRAMING SHIFTS PEOPLE'S INFORMATION BASES IN OPINION FORMATION**

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Christian Baden

Amsterdam School of Communications Research (ASCoR)

University of Amsterdam

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Correspondence address: Christian Baden, ASCoR, University of Amsterdam, Kloveniersburgwal 48, 1012 CX Amsterdam, The Netherlands. Email: c.baden@uva.nl

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Framing affects how people think about issues. Familiar as this may be after decades of research in framing, this effect is still much better described than explained. There are two main question marks in the debate: First, researchers disagree whether framing operates through conscious or subconscious cognition (Druckman, 2001, 2004; Price & Tewksbury, 1997). While stunning effects even on experts' opinions suggest little chances for conscious intervention, other research has shown that, under certain circumstances, people are well able to actively select or even resist frames (Nelson & Oxley, 1999; Sniderman & Theriault, 2004). The role of subjects' personal knowledge, which constitutes the base of possible resistance to frames, is grossly underspecified in the scientific debate. It is commonly accepted that people require sufficient knowledge to "understand" the frame, and that the amount and organization of knowledge matters (Price & Tewksbury, 1997; B. Scheufele, 2004); however, this research field has so far delivered more scattered evidence and curious interactions than explanations of how exactly frames interact with the human mind (Druckman, 2001; Willnat, 1997, however, see Berinsky & Kinder, 2006, and Rhee, 1997, for interesting explicit models of the framed mind). As a consequence, also the cognitive processes through which framing operates – the second main question mark – are heavily contested. In recent years, rising attention for mediation processes in framing has produced various models advancing possible explanations for the observed effects (De Vreese, 2004b; Matthes, 2007; Nelson, Oxley, & Clawson, 1997; Price & Tewksbury, 1997; B. Scheufele, 2004; Slothuus, 2008). The common starting point for those models assumes that reported opinions do not reflect unique, stably stored attitudes, but rather a set of beliefs that are somehow combined into a reportable whole (Tourangeau & Rasinski, 1988; Zaller & Feldman, 1992). Consequently, there are three basic ways of affecting reported opinions: First, the content of single retrieved beliefs may change (Slothuus, 2008); second, the retrieved beliefs may be put together in different ways (Nelson et al., 1997; Tourangeau & Rasinski, 1988); finally, the set of beliefs underlying framed opinion may change (Brewer, Graf, & Willnat, 2003; Chong & Druckman, 2007a). So far, however, most models have focused on one out of these three possibilities: The oldest view, known as the "accessibility" model, understands framing as chiefly mediated by a priming process that changes beliefs' likelihoods of being considered for opinion formation. A second perspective heralded by Nelson and co-authors focuses on the weights attributed to considered beliefs, based on the idea that framing affects the "applicability" of beliefs (Nelson & Oxley, 1999; Nelson et al., 1997). The third mechanism, a change in belief

content, has usually been disregarded as non-framing persuasion effect, but was recently brought back to attention by Slothuus (2008, see also de Vreese, 2004b). In an effort to combine accessibility and applicability processes, Price and Tewksbury (1997) have provided a hybrid model which sees belief activation and belief weighting as two consecutive steps. However, to my knowledge, no model exists that considers all three mechanisms. Consequently, reflecting the scarcity of attempts to juxtapose or combine different explanations, conceptual boundaries remain somewhat ambiguous; operationalizations capable of distinguishing the different processes are notoriously difficult to derive, and have hardly been tested.

This paper attempts to combine all three views on framing mediation by applying a semantic network view on cognition. It provides a first sketch of an integrative model based on schematically structured belief systems. Crucially, it derives distinguishable operationalizations for the three main mechanisms, which allow empirically testing the advanced claims. Finally, it addresses several problems encountered in the measurement of cognitive processes and introduces an experimental design capable of simultaneously measuring all three processes.

THEORY

According to Zaller (1992; Zaller & Feldman, 1992), reported opinions are constructed ad hoc based on various underlying beliefs: Whenever people are asked to give their opinion, they scan their memory for relevant knowledge. Retrieving multiple beliefs, they weight these considerations by importance and then summarize the implied evaluative loadings. Variation in opinion can thus be explained by the sampling of beliefs entering the construction (see also Ajzen & Fishbein, 1980, 2000; Chong & Druckman, 2007a; Kuklinski & Hurley, 1996; Rhee, 1997; Zaller & Feldman, 1992). Attitudes, in that sense, are stochastic phenomena rooted in the distribution of valenced beliefs in a person's knowledge: drawing various samples from the set of related beliefs, a dominance of negative beliefs implies that a negative attitude is constructed most of the times (Matthes, 2007; Zaller, 1992). While an "attitude" includes the whole range of stored beliefs, reported opinions draw only upon a subset of those. Both possibilities, however, can be expressed in the following equation (Chong & Druckman, 2007a):

$$\text{Attitude} = \Sigma (\text{weight}_{\text{belief}} \cdot \text{valence}_{\text{belief}})$$

If framing systematically affects opinion, its effects must consequently be demonstrable in this equation. Marking the interaction of sampling, charging and weighting influences, this equation also establishes a logical hierarchy among the three processes: For weight

and valence to matter, a belief must first be included into the equation at all. Most conceptual unclarity in the existing framing process models can be traced back to this contingency: On the one hand, both belief content- and belief weight-focused models typically assume implicitly that the range of included beliefs is rather stable (Chong & Druckman, 2007b); modeling their empirical tests on these grounds, their rejection of accessibility-based belief activation models can surprise little (Nelson et al., 1997). On the other hand, accessibility-based retrieval models typically stop at the point where a belief is activated, foregoing the explanatory power borne in second step adjustments. Price and Tewksbury's (1997) two step model, formulating a sequence of belief selection and weighting, considers both processes, but treats them as largely independent from each other: While the frame affects the range of beliefs activated, it remains somewhat unclear how this then relates to the way in which relevance is credited to the retrieved beliefs. Focusing on framed retrieval, the assignment of weights appears as largely discretionary and frame-independent, thus contradicting those models locating framing's main influence in step two (Nelson et al., 1997). In the following section, I will thus develop a model that understands all three processes as logically interdependent (D. A. Scheufele & Tewksbury, 2007). However, in order to get a grip on the individual processes involved, it is necessary to briefly review the existing models of the framing process.

Framing belief content

Communication effects on belief content are probably the longest standing research tradition in communications. However, despite sizeable research in persuasive communication, the concept has been rarely applied to framing (Chong & Druckman, 2007a). It is by no means obvious how framing – which does precisely *not* primarily concern the content, but the context of information (van Gorp, 2007) – might alter belief content. However, Slothuis (2008) argues that, by presenting information in a particular, potentially unfamiliar context, people may become aware of connections that they had not thought about before. Discovering new relevant contexts may lead people to revise their beliefs (Shah, Kwak, Schmierbach, & Zubric, 2004; Tourangeau & Rasinski, 1988); for instance, when people first recognize the link between cutting “non-wage labor costs” and the decline in welfare entitlements, they may question their conviction that cutting these costs is necessary. The same belief assumes a different evaluative loading (valence). However, this form of framing influence is extremely difficult to predict, as it depends on a) people being unaware of a link, b) the frame being capable of introducing it to them, and c) this actually triggering a revision of beliefs.

Framing belief weights

Nelson and co-authors have argued that framing works primarily through the weights given to various connected considerations (Nelson & Oxley, 1999; Nelson et al., 1997). This view starts from the observation that, if reported opinions rest on various considerations, not all of these will typically point toward the same evaluation (de Liver, van der Pligt, & Wigboldus, 2007; Gamson & Modigliani, 1987; Zaller & Feldman, 1992). People need to trade off belief against each other, striking a balance between different valences (Sniderman & Theriault, 2004). Judging welfare policy, for instance, they may simultaneously think of good reasons supporting generous spending, and not less good reasons favoring budgetary discipline (Zaller, 1992). Framing then highlights one or few of these cues as crucial, casting other beliefs as minor or entirely inapplicable (Chong, 1996; Nelson & Oxley, 1999; Price & Tewksbury, 1997). Thereby, attributing weights effectively alters the selection of important beliefs, thus shifting the constructed opinion. Although the effect of weighting is thus quite similar to that of selecting different beliefs to start from, there are some crucial differences between the two views. First of all, weighting cannot be understood as an entirely automatic process; people must somehow cast a judgment about which thoughts they consider applicable to the problem at hand. (Druckman, 2001; Nelson & Oxley, 1999) Second, weighting can be gradual, such that beliefs can remain present in cognition but play different roles in attitude construction. Finally, and crucially, weighting is dependent upon retrieval. Only retrieved thoughts can be discounted or highlighted. Thus, to argue that framing works primarily through weighting is to claim that the set of retrieved beliefs is relatively stable.

Framing the set of beliefs

It is precisely this last assumption that is challenged by the view that framing affects the sampling of potentially relevant beliefs (Zaller, 1992). In this view, many thoughts are not so much discounted, but not at all brought to attention in the first place. This idea is not new at all, and has played a dominant role when framing research first surfaced in communications (Iyengar, 1991; B. Scheufele, 2004). Cognitive activation spread models provide the conceptual background for interpretation, understanding memory as a network of nodes (representing knowledge objects) connected along paths (expressing beliefs).¹ Either paths or nodes possess differing “accessibility” – a predisposition to respond more or less easily whenever other connected nodes are activated (Cappella & Jamieson, 1997; Collins & Loftus, 1975; Fiske & Taylor, 1991; Price & Tewksbury, 1997). From any activated belief, adjacent beliefs are retrieved until more distant nodes are not

accessible enough any more to react. Activated knowledge then forms the base for the construction of opinions (Matthes, 2007). According to this view, frames bias the activation spread by tapping different subsets of related nodes, increasing their accessibility and thus causing activation to spread in different directions. Framing effects, in this view, are thus mainly mediated through a priming of certain contextual beliefs, which are then more likely to inform opinion construction.

This view, however, has been soon rejected as too simplistic. For once, the psychological models developed on the level of word associations translated badly into the realm of more complex societal communication. Retrieved knowledge proved to be more consistent than predicted by automatic activation spread theories, intelligently filtering out related but currently irrelevant information (Brewer et al., 2003; Kintsch, 1988, 1998). Another aspect that contributed to the rejection of the accessibility model was the difficulty to derive and confirm testable predictions (Druckman, 2001; Nelson et al., 1997; Slothuus, 2008, see below).

Instead, some authors advanced hybrid models, which combined automatic accessibility-based activation with (usually sub-conscious) applicability judgment (Matthes, 2007; Price & Tewksbury, 1997; B. Scheufele, 2004); activated thoughts, in these models, were immediately eliminated again if they failed to reach a relevance threshold. What remains unclear, however, is on what grounds such a filtering can function – how can one judge the relevance of a belief before actually considering it? Reflecting this ambiguity, applicability was included twice in the model provided by Price and Tewksbury (1997): Initially, an unconscious applicability-component affected belief retrieval, thus reflecting, but not explaining the intelligent elimination of irrelevant beliefs demonstrated by cognitive psychologists; later, a conscious applicability judgment scrutinized and weighted those beliefs brought into active memory. Noting the awkward doubling, the authors suggested naming the conscious weighting judgment “appropriateness” to mark the distinction. Concurring with this distinction, I nevertheless sense that both processes are somehow related – and share a common problem: Both applicability and appropriateness judgments need to establish some criterion as to what constitutes relevance. Focusing on how relevance can be determined is key to understanding how exactly framing influences belief weighting, and what the link with belief selection and content might be.

A schematic model of framed cognition

In order to address these questions, I will now sketch a slightly more differentiated model capable of integrating the different perspectives introduced above. The starting assumption is quite similar to the activation spread theory in the accessibility tradition: Knowledge is organized in a semantic network, where activation is transmitted through links representing beliefs held to be related (Cappella & Jamieson, 1997; Matthes, 2007). However, cognitive psychologists have argued that organization of knowledge does not stop at this level. Rather, people group beliefs into schemata: densely integrated areas within the larger network which can act as wholes (B. Scheufele, 2004; van Dijk & Kintsch, 1983). Schemata can overlap, such that the same beliefs can be interpreted within different, internally consistent subsets of their semantic context (Conover & Feldman, 1984; Nelson & Kinder, 1996; van Gorp, 2007). Such schematic structures serve three main functions in opinion formation: First, schemata represent areas of heightened interconnectivity; once activated beliefs retrieve a matching schema, this embedded knowledge structure allows for enhanced retrieval of other schema-associated considerations (Feldman & Conover, 1983; Willnat, 1997). Second, schemata allow for a rapid screening of information for those components that match the knowledge structure (Kintsch, 1988; van Gorp, 2007). Beliefs activated that fall beyond the range of the schema can be discounted as inapplicable or inappropriate. Even if beliefs outside the schema are highly accessible, they may therefore remain below conscious attention, or drop out upon conscious judgment. Third, schemata carry valence (Conover & Feldman, 1984). While cognitive scientists have convincingly argued that evaluations of individual beliefs are usually not stored in memory, evaluative loads attached to schematically grouped beliefs are, at least roughly, remembered. Most attitudes refer to various schemata carrying different valences, reflecting greater or lesser ambiguity (de Liver et al., 2007); reported opinions vary depending on which schemata are tapped (Price & Tewksbury, 1997; B. Scheufele, 2004; Tourangeau & Rasinski, 1988).

Belief activation

Understood in such terms, the framing process can be sketched as follows. Frames – as they are understood in this paper – refer to cognitive stimuli that selectively raise the salience of specific semantic contexts of information. These contexts serve to identify suitable schemata that will inform the further processing of information: Schemata are activated once a critical number of contained beliefs is activated (Price & Tewksbury, 1997; Rhee, 1997); thus, by referring selectively to certain contexts, frames increase and decrease the probabilities that one or another set of schemata is used for interpretation

(Nelson & Kinder, 1996; Rhee, 1997; Shah, Domke, & Wackman, 2001; van Gorp, 2007). Once activated, schemata bias the further activation of knowledge by facilitating the retrieval of other schema-related beliefs and diminishing the (subconscious) applicability of beliefs beyond the schema (Kintsch, 1988). It is important to note that in most cases – certainly in framed political opinions, as will be discussed in this paper – opinion formation will not rely on one single schema alone (Gamson & Modigliani, 1987; Zaller, 1992). On the one hand, frames may themselves refer to more than one schema, and suggest specific links between them. On the other hand, whenever the integration of knowledge is dense, the chance is high that spreading activation reaches sufficient beliefs beyond the schema to activate also adjacent or overlapping schemata (Conover & Feldman, 1984; van Gorp, 2007). Framing thus merely raises the probability that certain schemata and attitudes will take part in opinion formation, but it does not determinate the retrieval of beliefs (Rhee, 1997). Highly accessible beliefs, and considerations relevant to very many schemata, may still survive this bias in retrieval and screening, but the thresholds required for admittance into conscious consideration are increased (Kintsch, 1988).

Belief valence

As people activate different schemata, they not only summon different subsets of potentially relevant knowledge, but also the stored valences (Conover & Feldman, 1984). Retrieving more positively or negatively charged schemata, the manipulation of semantic context gives rise to those opinion changes described in framing research. Valences can show different extremity, ranging from strongly positive over neutral to strongly negative. These emotional loads interact with the internal structuring of the schema: The stronger a schema's evaluative loading, the more consistent are and interconnected its contained beliefs – which again increases a schema's likelihood to attract activation (Bizer & Krosnick, 2001; Miller & Peterson, 2004). If an activated schema is closely linked to one charged with strong valence, it is thus very likely to attract sufficient activation to be retrieved as well. If most schemata pertaining to an issue carry resonant valence and coherent content (reflected in dense inter-connections), these form strong attitudes (Bizer & Krosnick, 2001). Strong attitudes may override framing effects by attracting attention whenever neighboring beliefs are tapped (Chong & Druckman, 2007a; Druckman, 2001; Matthes, 2007). Inversely, trivial information such as definitional attributes of a considered issue are unlikely to carry much valence; although likely to be

activated due to their close link to the framed information, they are only likely to retain much activation if no stronger valenced schemata are found in the vicinity.

Belief weighting

At the level of valences, mismatches and contradictions almost necessarily arise. Once two or more schemata carrying different valences are activated, inconsistencies must be addressed by judgment (Tourangeau & Rasinski, 1988). All retrieved schemata are considered in active thought, and the appropriateness of different applicable interpretations is judged. The most parsimonious way of determining which interpretations prevail is to assess the internal consistency of retrieved beliefs: If, for instance, out of five retrieved schemata, four a) carry similar valence and b) are densely interconnected, or even overlapping, while the fifth stands apart, this schema is likely to be discounted. Strong valence, dense interconnectedness of beliefs, and consistency of valences across retrieved schemata are the main criteria for the assessment of appropriateness (Sniderman & Theriault, 2004). Thus, people do not need any independent, framing-susceptible standards for judgment; the response of stored knowledge structures to the framed information provides a sufficient base to assess relevance. Framing effects on belief retrieval and weighting are essentially two steps of the same construction process (Price & Tewksbury, 1997; Rhee, 1997; D. A. Scheufele & Tewksbury, 2007). Accessibility, applicability and appropriateness all form elements of a self-reinforcing construction bias, which prefers beliefs schematically stored as related over isolated ones.

Belief re-evaluation

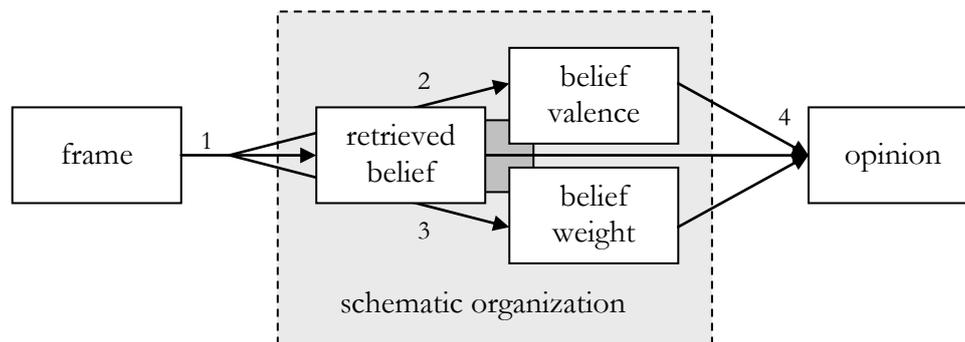
Belief content change, the final ingredient of framed opinion construction, can occur whenever spreading activation retrieves schemata not known to be directly connected. If unconnected schemata survive both the applicability and appropriateness bias, they are considered together in active thought; connections or trade-offs between both may be discovered, leading to a re-evaluation of the stored beliefs and valences (Shah et al., 2004; Tourangeau & Rasinski, 1988). Note, however, that this is unlikely to occur, as both the retrieval and weighting processes favor connected schemata.

Schematic organization of beliefs

Due to the crucial role of schematic organization in framing effects, framing cannot be thought of independently from a person's acquired belief system (Chong & Druckman, 2007a; Rhee, 1997; Shen, 2004). In that sense, even spreading activation within or across schematic groupings reflects some kinds of applicability judgments cast at an earlier point

in time, when the schema was formed (Brewer et al., 2003; Cappella & Jamieson, 1997; Matthes, 2007). The organization enshrined in earlier construction processes not only forms the environment in which accessibility can be manipulated; it also forms the base for all judgments of applicability and appropriateness (Feldman & Conover, 1983). Thus, although most of the construction process passes below a consciousness threshold, it is by no means mindless or driven by the stimulus alone (Druckman, 2001; Sniderman & Theriault, 2004). Rather, it is informed by the structure of a person's prior understandings, her prior considerations, evaluations and conclusions.

Summarizing the model, frames first selectively tap certain schema, leading to the retrieval of a biased set of beliefs (arrow 1). This set already reflects automatic applicability screening through the schematic organization of beliefs. Retrieved beliefs are considered in active thought. In this second step, new connections between beliefs can be discovered, triggering belief reevaluation, and thus causing changes in belief valence (arrow 2). Simultaneously, the organization and valence structure of retrieved beliefs informs the judgment of belief appropriateness, adjusting belief weights (arrow 3). From the valenced, weighted set of beliefs, finally, opinion is constructed (arrows 4).



Expectations & Hypotheses

Following the model laid out above, we can distinguish between the framing effect onto the range of considered beliefs, the valence of activated attitudes, and the weight given to all considerations. The range of beliefs that are retrieved depends chiefly on the density of links within and across schematic knowledge. With high density activation should reach considerations quite different from the cued ones within only a few steps of spread. All strongly charged schemata should be well within reach for activation. Less densely organized knowledge should keep activation closer to its origin. Frames targeting specific schemata may successfully keep other beliefs out of active thought (Shen, 2004). Regarding arrow 1 of the model above, the following hypotheses can be stated:

H1a: Retrieval of beliefs in strongly integrated schematic knowledge is largely frame-independent.

H1b: Retrieval of beliefs in weakly integrated schematic knowledge is mainly frame-consistent.

The valence of attitudes is also related to interconnection density. Within densely integrated schematic knowledge, valence is likely to be locally coherent: Most relevant evaluative beliefs have at some time been considered together, and most dissonances have been resolved (Axelrod, 1976). Highly coherent and strongly charged valences are likely to override dissonant valences cued by frames. The more sparse association links are, the easier can conflicting valences continue to coexist, and the easier can frames retrieve schemata selectively (Brewer et al., 2003). At the same time, while different tapped schemata summon different valences, evaluative loads within the same schemata should be rather stable. The case selected for testing (see below) used schemata where most connections should be already familiar, rendering discovery of new connections between dissonant schemata unlikely. Belief re-evaluation should be rare.

H2a: Valences of retrieved schemata are more diverse in weakly integrated schematic knowledge.

H2b: If the frame is generally familiar, valence within retrieved schemata is unaffected.

H2c: Differences in the overall balance of retrieved valences mainly reflect different schema selection.

The weights attributed to retrieved considerations react to the diversity of schemata selected to process information. Considerations from selected schemata should be weighted strongly, and beliefs from outside these should not matter too much. The more similar and similarly valenced beliefs are activated, the higher weights should be attributed. Where a frame is adopted, cued schemata should resonate with many other retrieved thoughts, increasing their appropriateness. Likewise, schemata carrying strong valence should increase in weight. Activated but isolated or weakly valenced beliefs should decrease in weight – for instance, definitional information (de Vreese, 2004a), or beliefs cued by a frame that has not been followed (Chong & Druckman, 2007b).

H3a: Definitional information is discounted whenever a frame is present.

H3b: Belief weights are the higher the more similar schemata are retrieved as well.

Finally, looking at the whole mediation process of the framing effect, opinion is constructed by summarizing the weighted and valenced retrieved beliefs. Since reported is an evaluative judgment, it should under all circumstances cohere strongly with the range of valences retrieved from the various schemata. In order to assess what mediates the *change* in opinion associated with the frame, however, we need to look at the whole process, not only arrow 4 in the model above. The hybrid model presented here expects frames' main influence to be on the range of retrieved beliefs. Valences are not necessarily affected directly. Rather, frames matter indirectly by retrieving more or fewer

beliefs charged with a particular valence. Likewise, by activating more or less coherent sets of beliefs, frames affect belief weights. Valences and weights then predict opinion. Thus, framing mediation is an indirect, two-step process.

H4a: Opinion is predicted best by belief valence, and partly by belief weight.

H4b: Framing is mediated by biasing the set of beliefs from which valences and weights are considered.

The more diverse belief valences are (H2a), the better does belief activation alone predict opinion; this influence is mediated through retrieved valences and attributed weights.

Measuring framing mediation

Before testing the above hypotheses, the issue of measurement requires some consideration. Framing mediation has been notoriously difficult to measure, mainly because of conceptual unclarities which allowed interpreting the same observations in different ways. This problem can only be addressed through theoretical specifications, as has been attempted above. A related problem is that most measurement techniques simultaneously alter the cognitive state they are supposed to measure. This is particularly troublesome when measuring the activation of beliefs, ruling out the use of questionnaire methods (Brewer & Gross, 2005). In cognitive psychology, concept activation is typically tested through response-time measures in word recognition (Kintsch, 1998; B. Scheufele, 2004; Zeelenberg, Pecher, Shiffrin, & Raaijmakers, 2003) – a method both difficult to administer, and questionable in its validity with regard to more complex communication effects (however, see Nelson & Willey, 2001). Using concept-sorting tasks, Berinsky and Kinder (2006) were able to show that frames indeed direct attention to discover different relations and paths between beliefs. However, while supporting the theoretical idea underlying the activation spread model, this approach cannot address whether people indeed retrieved different considerations along these paths.

The other processes – affecting valences and weights – can more convincingly be measured by questionnaire; however, this is not without problems either. Nelson and Oxley (1999), interested in weights, asked people to rate or rank the importance of several provided considerations. However, as the authors note themselves, this design may miss important considerations if they are not included in the list. While this limits the power of the approach – particularly considering people’s tendency to draw upon rather diverse knowledge in interpretation (Schaap, 2006) – this does not necessarily threaten the validity of measurement. However, the more considerations are offered, and thus the more confidently all relevant weight changes are captured, the more likely will people be introduced to considerations that had not been on their minds – until they

were asked. If people then simply rate new ideas as unimportant, one would obtain systematic variation in the indicators, but mistake it for a discounting judgment, rather than inaccessibility. In order to test the above model, a measure is needed that can distinguish discounted from not at all considered beliefs.

For this reason, this study relied on an open ended approach to assessing the range of retrieved beliefs (Brewer & Gross, 2005; de Vreese, 2004a; Price, Tewksbury, & Powers, 1997; Rhee, 1997; Shah et al., 2001). Collecting people's spontaneous associations after being exposed to the frame should validly capture the range of beliefs that were on people's minds when forming an opinion (Ajzen & Fishbein, 2000; Zaller & Feldman, 1992). Having thus established that the collected considerations are already activated, it is much less problematic to continue asking participants to rate the importance they attach to the different thoughts. However, the validity gained in this approach comes at a cost: By stopping participants right after receiving the frame, asking them to associate, this approach leads people to consider their memory more deeply than might have been the case in comparable framing experiments. These typically measure opinion right after the exposure to the frame, or after some irrelevant distraction task that leaves the schematic knowledge about the issue matter untouched. As Zaller has shown, such "stop-and-think" probes make people more aware of their own stored beliefs (1992). Thus, the framing effect on opinion is weakened considerably. Another drawback, referring to computational power, will be discussed below.

However, this dampened total effect is relatively unproblematic for the study at hand: First, frames' potential of inducing opinion change is well familiar, and has been ascertained for the chosen frames in the prior manipulation check. Without the interruption, opinion change materializes; the opinion measure in the interrupted process is thus biased towards higher consistency with one's own retrieved beliefs, but in principle the process should be identical, just dampened. Second, the process investigated in this study applies to all forms of framed cognition, regardless of whether the changes in belief selection, valence and weights actually converge towards measurable differences in opinion. Frames may bias cognition effectively and yet not lead to significantly different conclusions. Opinion change is but the most striking symptom of framed cognition, but neither its only, nor arguably its most relevant effect.

METHOD

This study uses an experimental design embedded in an online survey. A total of 357 participants (Mean age: 23.3, 71% female) were randomly assigned to one out of three

framing conditions (economy, identity, and control²) within either of two issue conditions (strongly and weakly integrated schematic knowledge). In this study, the realm of European politics was chosen to test the theoretical expectations about framing mediation. In particular, I focused on two issues that were framed in different ways: the European common currency (euro), and EU enlargement. As most political issues, these fulfill the basic requirement for framing effects: Both are generally familiar (so schemata exist) and can be understood with respect to quite different aspects of political, social, and economic life (various schemata are potentially relevant, Gamson & Modigliani, 1987). At the same time, they vary with regard to how densely integrated people's schematic knowledge about them is: At least in the Netherlands, the euro is a fact of daily life. Following heated and lingering debates about its economic and social effects, most people should have a wide range of highly developed and valenced schemata at the ready (Baden & De Vreese, 2008; van Gorp, 2007). Strong attitudes have been developed. By contrast, EU enlargement is a far more distant experience for most Dutch; it has been strongly publicized, such that diverse knowledge can be assumed (Kleinnijenhuis, Takens, & van Atteveldt, 2005), but attitude strength – the density and evaluative loading of schemata – should be far lower. While framing effects in case of the euro need to compete against strong attitudes for scarce attention, in case of EU enlargement frames should direct activation more successfully. All variations between the conditions were confirmed by a prior manipulation check (N=112, all manipulations significant at .001 level); knowledge integration was ascertained again in the main experiment, asking how close and how familiar participants were with the selected issues.

Framing manipulation

The frame manipulation used two rather broad contexts that are frequently raised in relation to EU Integration, and both enlargement and the euro in particular. Thus, participants were generally familiar with the introduced frame. The framing material was designed to resemble a newspaper article, without being overly informative. 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. As framing devices, the headline and a paragraph within the text were manipulated (Rhee, 1997). In the economy condition,

implications for trade and industry were highlighted, whereas the identity condition referred to hopes and fears about national identity and a European society. 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. The other parts of the article were identical. The two issue conditions were largely identical as well, exchanging word and phrases mainly to alter the content. The stimulus material is reprinted in the appendix.

Data collection

After a few demographic questions, participants read the brief framing text, introducing the issue and casting it in terms of economic developments or bearing on identity. The control group 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 and 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. Subsequently, respondents could rate (on a five point scale) all eight to sixteen entered associations with regard to how important each of them was for their personal opinion. All together, 3033 entered and rated associations were included in the analysis. Aside this, a number of control variables (education, political interest, need for cognition, European identity, and involvement with the issue) were recorded.³

Analysis

For further treatment, all associations were coded with respect to their topic, mainly by grouping uses of the same word roots and synonyms. At this topic level, the valence of an association was determined (see also de Vreese & Boomgarden, 2003; Price et al., 1997). Since many associations explicitly qualified the associated topic, valence coding distinguished between positive, neutral, and negative references (e.g., welfare, legislation, poverty), as well as positive, and negative qualifiers (e.g., less welfare, against poverty). A scale was constructed, ranging from negative objects with further negative qualification (1) via rejected neutral and simple negative (2), non-negative (3), neutral (4), non-positive

(5), endorsed neutral and simple positive references (6) to positive comments with further positive qualification (7). Except for the negations (non-positive, non-negative), which were underrepresented, valence was approximately normally distributed along this scale.

To reduce the complexity of the thematic coding, semantically related topics were grouped into nine thematic domains: Definitional information (references to defining properties and aspects of the issue, e.g., euro → money, enlargement → Eastern European countries), Economy (all economic thoughts unless coded in the following two domains), Trade (references to economic relations between countries, im- and export, financial transfers, etc.), Mobility (references to personal ease and freedom of movement in Europe, in private and business context, including working or studying abroad), Identity (references to feelings of belonging, social community, cultural richness and threats), European Union (references to EU integration, EU institutions, actors and symbols, policies and legislation), Democracy (references to EU level democracy, top-down decision making, and the will of the people), Politics (references to domestic politics and policy issues, actors, and power), and Values (evaluative statements, feelings, and references to norms and ideals). Where it was not entirely clear which domain a topic should be assigned to, the schematic structure of people's EU-related beliefs as sketched in (Baden & De Vreese, 2008) was consulted for disambiguation. In particular, this led to the creation of the mobility domain (grouping personal economic prospects not with thoughts about the national economy, but with personal freedoms and mobility), and the assignment of various policy-issues (e.g., security, social policy, poverty) to the politics domain. Domains varied considerably in the number of contained beliefs, which carried highly diverse valence within all domains.

For calculation, the unit of analysis was moved down from the individual level to the level of single associations. Thus, the data assumed a two-level structure, representing associations within individuals. All non-categorical variables were centered and standardized. In total, three separate kinds of estimations were computed. First, the topic of association was predicted from the framing and issue condition by multilevel multinomial logistic regression. Separate coefficients were estimated for each target domain, allowing frames to show different effects on the presence of each kind of beliefs. Intercepts were allowed to vary between individuals, accommodating idiosyncratic preoccupations with different themes. Predicted probabilities for an association to belong to either domain were calculated for the control and both framing

conditions. Second, the conditional effects of framing and issue conditions on belief valence and weight were estimated separately for each domain of beliefs, using multilevel linear regression. For this estimation, only those associations coded into the respective domains were selected. Again, regression intercepts were kept random at the individual level, reflecting idiosyncratic understandings. Regressions thus focused on the uniform effects of the frame and issue condition on valences and weights of beliefs about the same topic domain. This estimation of conditional effects, however, entailed a potentially considerable loss in calculation power, since for some domains only relatively few associations could be included (six estimations included fewer than 100 cases, the identity domain counting only 24 cases in the euro condition). To reflect this, weaker significance levels were admitted, as well. Finally, all variables' influences on opinion were estimated using simple linear regression.⁴ To assess *H4b*, also a number of reduced models were run, excluding different groups of predictors. Each estimation was run both combined and separately for both issue conditions.

RESULTS

In order to relate the obtained results to other studies such as those conducted by Nelson and co-authors, Slothuus, and Shah et al., I will report them in the format of a mediation process (Baron & Kenny, 1986). This strategy allows considering the different processes one by one before pulling them together and tracing the influence of frames over the different steps. As expected, the total framing effect was strongly dampened (compared to the prior manipulation check) due to the influence of the intervening association task. Only support for the euro varies significantly, albeit not strongly, between the framing conditions: the identity frame decreased support. However, despite the small effect on opinion, there several are pronounced differences in the intermediary stages. These differences allow tracing the effect of the frames upon range, valences and weights of associations, and through these on opinion. If the variables that are strongly affected by the frames are the same that also affect opinion, mediation takes place. All significant paths of influence are summarized in the below figures, showing the results for the euro and the enlargement conditions. Line sizes reflect significance levels; coefficients represent betas or, for the prediction of topic domains, change factors in predicted probabilities. As a reference category, domains' predicted probabilities if no frame is provided (control condition; all controls held at their means) are given below the domain labels. The predicted probabilities if either frame is present can be calculated as follows:

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

FIGURES 1 & 2 ABOUT HERE.

Belief activation

In line with *H1a*, the euro as a cue raised largely the same kinds of associations regardless of the frame. Distinguishing frame-specific effects – i.e., influences associated with one frame only – from those are common to more than one condition, there is only one significant frame-specific effect: The identity frame increased the probability of references to values and explicit evaluations. Aside that, people only mention democracy-related thoughts at all if some input has been provided, but the share remains below 2%; this effect is only significant for the identity frame, but there is no significant difference between both frames. Most deviations are swallowed by the variability of responses.

In case of EU enlargement, there are by far more significant influences of the framing condition on considered beliefs, confirming *H1b*. Generally, the bare fact that some frame has been provided moves people's thoughts away from definitional information, towards considerations about economy, trade and identity. Interestingly, there is little difference between both frames' capability to raise people's awareness of *both* the economic and the identity domain. However, concern with personal economic consequences (mobility domain) is significantly increased by the economy frame only: Although not explicitly referred to in the stimulus material, the focus on economic topics broadens the range of economy-related schemata people tap. Likewise, the identity frame broadens the range of people's thoughts about politics and identity in a uniting Europe, increasing attention for EU level political cooperation and democratic representation; aside that, the frame also affects the angle, prioritizing a European viewpoint over a national one, which – although not dominant in the control condition either – receives less attention.

Belief valence & weighting

Aside the effects on associated topics, there are also a few effects of the frames on the valences and weights of associations within the domains. As anticipated by *H2a*, valences vary much stronger (about twice as much) between domains in case of enlargement, reflecting less integrated, more fragmented schematic beliefs. There are a few weakly significant but sizeable framing effects on domain valence. As attention is drawn away from definitional information by the mere presence of a frame, these considerations turn

more negative. This effect is visible in both issue conditions, but is significant only for enlargement. In case of the euro, domestic politics is evaluated significantly more positively under the identity frame. Aside this, however, valence within domains is largely unaffected by either framing condition, confirming *H2b*.

The effect of domain sampling on overall valence assumed by *H2c* does not materialize: Differences in average valence scores between frames did not reach significance. Also, neither frame-dependent changes in domain probabilities nor valences were significant predictors of average valence. This stability despite the differences in raised topics links to the small differences in overall opinion: Possibly, those shifts between domains observed in the enlargement condition retrieved contradictory valences, causing large variance but canceling out on the aggregate level.

Regarding belief weights, there are again only relatively few, weakly significant but sizeable framing effects. In accordance with *H3a*, the importance of definitional information is lower whenever a frame is present; however, this is only significant for enlargement under the identity frame. As more relevant beliefs are retrieved, the comparatively uninformative definitional information is discounted. Instead, some frame-resonant domains gain in weight, supporting *H3b*. In the enlargement condition, the economy frame not only retrieves a broader range of economy-related thoughts, but also increases their importance. This is significant only for mobility, but reflects a general tendency. Inversely, the incompatible identity frame decreases mobility weight in the euro condition. The gain in importance for domestic politics towards enlargement under the economy frame does not fit the predictions, however. The domestic politics domain matched neither frame, and would have been expected to lose importance under any frame.

At any rate, both valences and weights were affected only sporadically by the framing condition. It is worth noting that, fixing the required significance level at 10% for these estimations, we would expect 1.8 of the 18 estimated effects in either condition to be significant by mere chance. Although most influences match the predictions, the found two and five significant effects are hardly impressive – and clearly secondary behind the strong effects on belief selection.

Opinion change & framing mediation

Moving on to the right half of the two figures, the effects of beliefs, valences and weights on people's opinion are presented. As stated in *H4a*, the valences of considerations are by far the best predictors of opinion: Taken as the only predictor, these explain 7.9% of

support for the euro, and 12.9% of support for enlargement. Particularly evaluative statements (values domain) were highly influential, followed by people's beliefs whether the euro or enlargement related positively to economic prosperity, identity and domestic politics; participants' evaluation of European democracy proved to be a strong predictor if present, but only few considerations dealt with this domain. Retrieved belief valences predicted enlargement support better than euro support, reflecting the larger diversity of evaluations in enlargement-related beliefs. Aside valence, people were more positive towards EU enlargement if they considered their thoughts about the EU and European democracy as less important. In case of the euro, people were more positively disposed when they attached more relevance to their personal, as opposed to the general economy. However, the influence of weights was far smaller than that of valences. Also the range of associated topics played a minor direct role in both cases. Chiefly, a higher amount of evaluative statements decreased support for enlargement, while the mere presence of democracy-related thoughts increased support for the euro.

However, this is not at all to say that the sampling of activated beliefs is without consequences for opinion. Taking into account the expected mediation process formulated in H4b, the influence of belief sampling should be taken over by valences and weights, and no strong direct effects of sampling on opinion would be expected. Potentially, whenever framing affects belief sampling and valence and weight affect opinion, mediation might take place. Seen in this light, the only domain that is entirely unrelated to opinion is trade.⁵

To test whether mediation actually occurs, two more things must be established: first, in the absence of valences and weights as predictors, belief sampling must have a significant effect on opinion. Second, when the mediating variables are entered, this influence must shrink or disappear entirely, as the mediators take over the effect of belief sampling. Taken as single predictor beside the controls (involvement, political interest, need for cognition, and European identity), belief sampling explains a small but highly significant (below $p=.001$) proportion of differences in opinion: Domains add 1.7% explained variance to the control-only model in the case of enlargement, and 0.6% in case of the euro. Together, controls and domains explain 7.4% and 12.2% of differences in opinion, respectively. Adding valences and weights to the model, explanatory power increases to 18.3% (enlargement) and 18.1% (euro), respectively; the incremental contribution of domain selection drops below 0.5% and loses significance. Albeit weaker than hoped for, mediation takes place. Keeping in mind the measurement-induced bias towards relatively

exhaustive and coherent sampling of relevant attitudes (reflected in stable opinions and balance of valences), findings are likely to underestimate the extent of framing mediation that could be expected without interruption.

Finally, we need to step back to assess the whole two-step mediation process formulated in H4b, and add also the original frames as independent variables. The same picture emerges, showing decreasing and less, respectively non-significant influences of the frames once the mediating variables are plugged in. One effect loses significance once the mediation is controlled for: The economy frame no longer boosts support for enlargement. Two more framing effects decrease but retain significance in the full model: The identity frame shows a significant negative impact on enlargement support, while economic framing leads to significantly lower support for the euro. The identity frame is consistently unrelated to euro support. The conditions for mediation are met, confirming H4b. The full process model explains 20.2% (enlargement) and 22.9% (euro) of variance in opinion.

DISCUSSION

The presented results underline three main insights into the nature of framing processes: First, frames' strongest direct impact lies in the shift of the semantic information base underlying people's judgments. This impact, however, is not mechanistic and purely accessibility based, but reflects engraved knowledge about the schematic applicability of beliefs. Second, it is not the semantic information base itself, but the valences and, less so, the weights of the sampled beliefs which predict opinion. Weights and valences are dependent on the set of beliefs retrieved, and thus mediate the influence of the frame on opinion. Framing, accordingly, should be understood as a two-step mediation process. Finally, this mediation process takes place in an environment of schematically structured knowledge. Let me briefly discuss these findings in turn.

As for framing's demonstrated capability to shift people's information bases, this finding ties in neatly with propositions advanced by accessibility-based models. However, as noted by cognitive psychologists before, these shifts are smarter and more systematic than anticipated by pure accessibility models. Related beliefs are not retrieved at random, but following schematic relevance (Kintsch, 1998). Retrieved beliefs are, furthermore, not simply variations and implications of those beliefs raised by the frame, but elaborate these by expanding the information base into thematically related schemata. In the reported experiment, the frame's main effect was to suggest which of those salient, under all circumstances retrieved schemata merit further elaboration. Both identity- and

economy-framed participants used both identity- and economy-related considerations; but the range of schemata retrieved beyond these matched those beliefs referred to by the frame (Price et al., 1997).

Revisiting the literature on activation spread models of framing, it seems that the reasons advanced against the pure accessibility mechanism do not apply to the schematic version sketched above. Most notably, the approach introduced above provides direct empirical support for framed belief activation, thus countering the familiar problem to derive distinct testable propositions (Nelson et al., 1997). Furthermore, the engraved schematic structure is well capable of explaining those smart deviations from unguided associative retrieval (Kintsch, 1998). Schema-guided activation spread is not mindless and automatic at all, but contingent upon the structure of knowledge (Berinsky & Kinder, 2006; Rhee, 1997). Such “smart” accessibility is essentially the same as a subconscious basic applicability judgment (Price & Tewksbury, 1997). Thus, the above model formulates a mechanism capable of explaining how, for instance in Price and Tewksbury’s (1997) model, applicability and accessibility can operate simultaneously and on the same level of consciousness. Tapping beliefs within schemata, frames affect belief retrieval at the level of subconscious cognition. Although framing effects are contingent upon the idiosyncratic knowledge environment within which they take place, they are beyond full discretionary control: their main impact is already achieved before conscious cognition intervenes.

This is most aptly illustrated by the second main point: Opinion formation, obviously, is not at all subconscious any more (Druckman, 2001; Nelson et al., 1997; Price & Tewksbury, 1997). People utilize those beliefs that have been brought to their attention, they adjust belief weights to achieve coherent judgments, and reconsider evaluative loads where in-discountable inconsistencies arise (Brewer et al., 2003; Brewer & Gross, 2005; Matthes, 2007). These considered beliefs, and not the automatically retrieved beliefs, inform opinion. In that sense, Nelson and colleagues (1997, 1999), as well as Slothuus (2008) are entirely correct in stressing the importance of frame-biased, but conscious judgment for opinion formation. In the data presented above, the direct influence of belief sampling on opinion was miniscule, entirely sucked up by the variables representing conscious (re)evaluation. The addition of the model presented above lies in its attempt to explain *how* exactly framing biases these judgments. Since only retrieved beliefs can be (re)evaluated, and the retrieval of beliefs is highly susceptible to framing (Price & Tewksbury, 1997), the solution this model suggests is both obvious and

relatively parsimonious: The same processes that bias belief retrieval are also responsible for the biased judgment of appropriateness and belief content (Kintsch, 1998; van Dijk & Kintsch, 1983); no external, frame-affected relevance standards are required. Again, the framing process is thus simultaneously dependent, and independent of conscious cognition: While judgments are discretionary, they are systematically biased by belief retrieval, which is beyond immediate conscious control.

The third main point is the logical upshot of the two previous points taken together. Many researchers have already noted the awkward paradox that framing, on the one hand, cannot reliably be countered by expert knowledge or high involvement, while on the other hand it clearly reacts to personal predispositions (Brewer & Gross, 2005; Nelson & Oxley, 1999; Sniderman & Theriault, 2004). The degree of consciousness involved in framed cognition has been contested for years, newer models putting increasing stress on the limits put to framing by active thought (Brewer & Gross, 2005; Chong & Druckman, 2007a; Shen, 2004; Slothuus, 2008). Theoretically, the distinction is highly important: First of all, assuming conscious judgment as the main mechanism through which framing works implies that everything below consciousness level is relatively untouched by the frame. If people then yield to framing by conscious choice, they commit a violation of rationality (Druckman, 2004): Evaluating their knowledge in different ways, although no information has changed, people would exhibit genuine attitude instability (Druckman, 2001). At the other end, if framing operates through subconsciously cognition, opinion instability does not necessarily violate rationality: If people understand an issue relying on shifted information bases, people strictly speaking answer slightly different questions when reporting their opinion (Milner, 2006; Zaller, 1992). Applying slightly different definitions of the issue, different opinions may still be derived rationally, according to consistent rules. Framing does not affect people's genuine preferences, it just makes them aware of different subsets of their conflicting beliefs (Zaller & Feldman, 1992). The model laid out above takes a middle road. Framing is, at least partly, beyond the discretionary control of the individual. The information base changes such that various opinions can be simultaneously consistent with genuinely held beliefs. At the same time, people are not left helplessly at the mercy of framers and spin doctors. Their engraved experience and knowledge maintains a crucial role of people's own convictions and attitudes, unavoidably affecting and possibly even overriding framed cognition (Bizer & Krosnick, 2001; Shen, 2004; Sniderman & Theriault, 2004). Furthermore, all retrieved thoughts pass through active thought, where

salient attitudes can be weighted strongly, and odd, unfamiliar beliefs can be discounted (Brewer & Gross, 2005; Nelson et al., 1997; Price & Tewksbury, 1997). It is easily imaginable how the depth of processing can affect both the breadth of belief retrieval (further activation spread ameliorating the importance of the frame), and the (re)evaluation of retrieved beliefs (Chong & Druckman, 2007a; Matthes, 2007; Slothuus, 2008). People are thus potentially capable of resisting frames, even if they have little power over the immediate cognitive response in terms of belief retrieval. Framing exerts pervasive power only if people's knowledge is diverse but disorganized (Bizer & Krosnick, 2001), and people do not invest the energy to re-evaluate their (in such a case likely disconnected) beliefs as retrieved by the frame. Well-organized, consistent schematic knowledge automatically reduces the impact of frames (Kintsch, 1998; Rhee, 1997); and even if people have weakly developed attitudes available, they may still expose the retrieved beliefs to scrutiny in active thought if they choose to do so. Framing effects are neither capable of swaying people completely regardless of their prior beliefs, nor are they likely to be resisted entirely. Framing cannot be understood independent from individual, idiosyncratic and potentially quite well-fortified knowledge structures.

Limitations

Obviously, this study is subject to several limitations. As has been discussed above, the chosen measurement method interrupts the cognitive process underlying the framing effect (Zaller, 1992). Fortunately, the implications of such an interruption are relatively well-covered by existing knowledge about response behavior (Raaijmakers & Shiffrin, 1981; Zaller & Feldman, 1992). Participants likely searched their minds for more beliefs than they would normally have relied on. Retrieval should be more exhaustive than otherwise expected, and opinion more consistent with stored attitudes – thus dampening the effect of framing (Fiske, Kinder, & Larter, 1983; Tourangeau & Rasinski, 1988; Zaller & Feldman, 1992). I believe there is no way to record intervening belief retrieval that fully avoids this problem. Given the considerable validity problems of alternative ways of assessing framing mediation, the chosen measurement method clearly shows benefits that outweigh the problems. Another problem concerns the assumptions about attitude strength and knowledge organization. While supported by well-defined expectations in the attitude strength literature, and crudely confirmed in the manipulation check, this gives us little more than a glimpse at the vast possible diversity in knowledge organization (Kuklinski, Luskin, & Bolland, 1992; Price & Tewksbury, 1997; Tourangeau & Rasinski, 1988). Schematic structures, while possibly detectable in in-depth individual

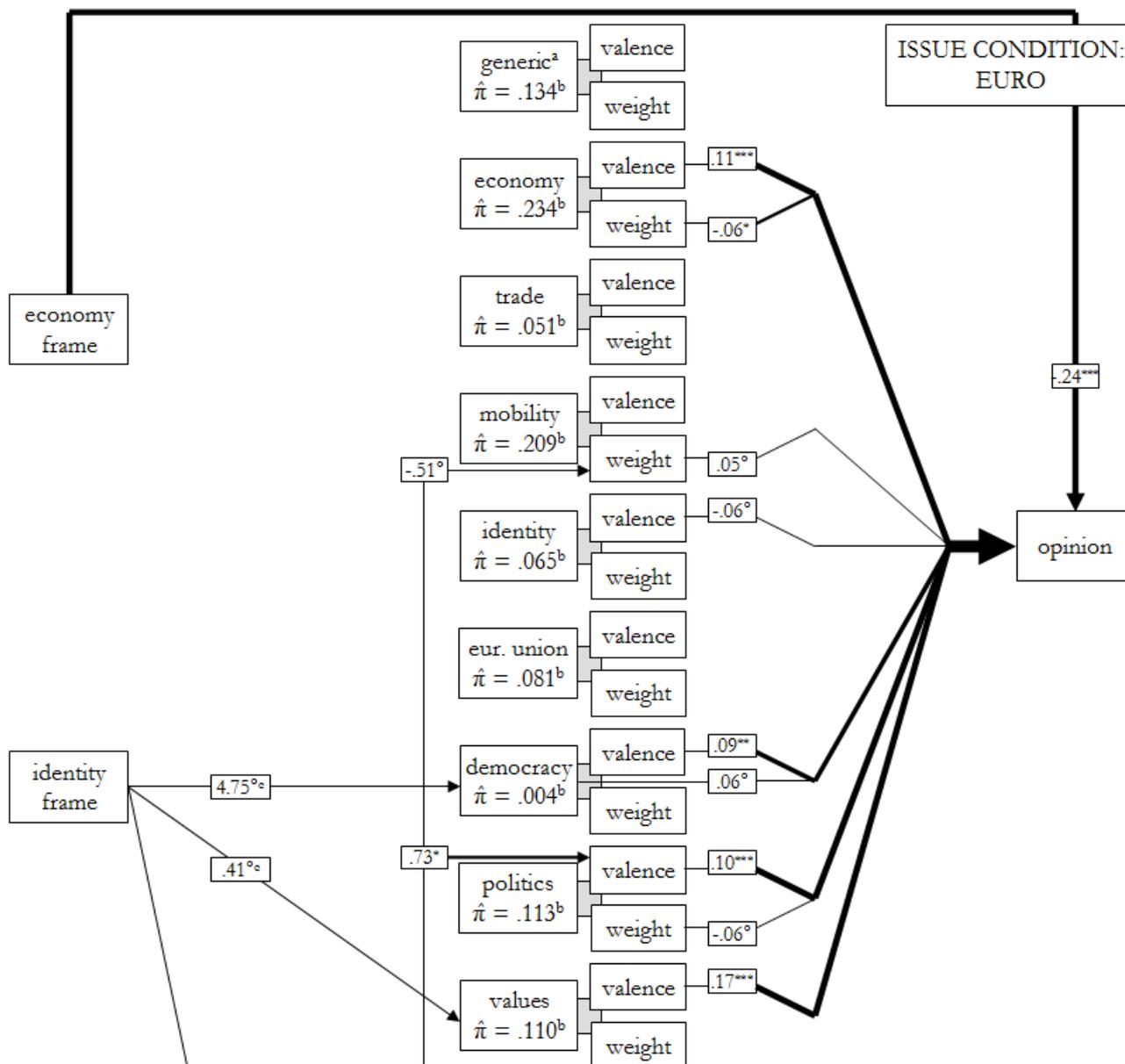
interviews, elude measurement in a survey-embedded experiment (Graber, 1988). There are many reasons to expect not too dissimilar schemata in participants' minds, but the chosen method is incapable of explicitly confirming these structures (Berinsky & Kinder, 2006; Brewer & Gross, 2005; Sotirovic, 2003). Instead, it merely assumes thematically organized schemata, and checks how well retrieved belief patterns match thematic domains far above the level of single schemata. Due to the already hard strain on computational power, however, a more fine grained analysis based on the present data is not possible without intolerable losses in statistical power.

Conclusion

Framing shifts people's information bases based on semantic, schematically structured association. These shifted information bases are then subjected to various judgments which, however, are themselves based on no more information than that retrieved sample of beliefs biased by the frame. The sampling bias exerted by the frame is carried over through the whole process. While possibilities to counterbalance and re-evaluate exist, the more likely – and more effortless – outcome is that subsequent judgments reinforce the frame-induced bias. Nevertheless, modeling framing as a two-step mediation process makes a crucial difference to how we understand framing effects. It suggests a solution for the old debate over conscious versus unconscious, applicability-versus accessibility-based mediation. It accounts for both the irresistibility of framing, and the possibility to counterargue within a relatively parsimonious theoretical framework. Its parsimony obviously lies not in the restriction to one of the suggested processes – it includes all three of them – nor in the straightforward computational modeling – it is not particularly straightforward to compute. Rather, I think this model deserves being called parsimonious because it accounts for all these aspects within a single theoretical framework, without resorting to implicit, external relevance criteria left otherwise unexplained. Finally, the advanced model reduces the confusion built into existing framing models because it reconciles influences of the frame with the individual mind. Subjectivity and idiosyncratic beliefs are no longer understood as external disturbances in the framing process, but as inevitable, and indeed necessary elements of the model. Framing takes place within a person's mind, in an environment as complex and unique as any environment known to man. Ignoring this is not only implausible, it also foregoes all the explanatory power vested in the interaction between the frame and the human mind.

Figure 1.

Associations about the euro



Notes: Significance levels: *** $p < .001$; ** $p < .005$; * $p < .01$; ° $p < .05$; for the prediction of valences/weights, also significance levels of $p < .1$ (marked †) are admitted.

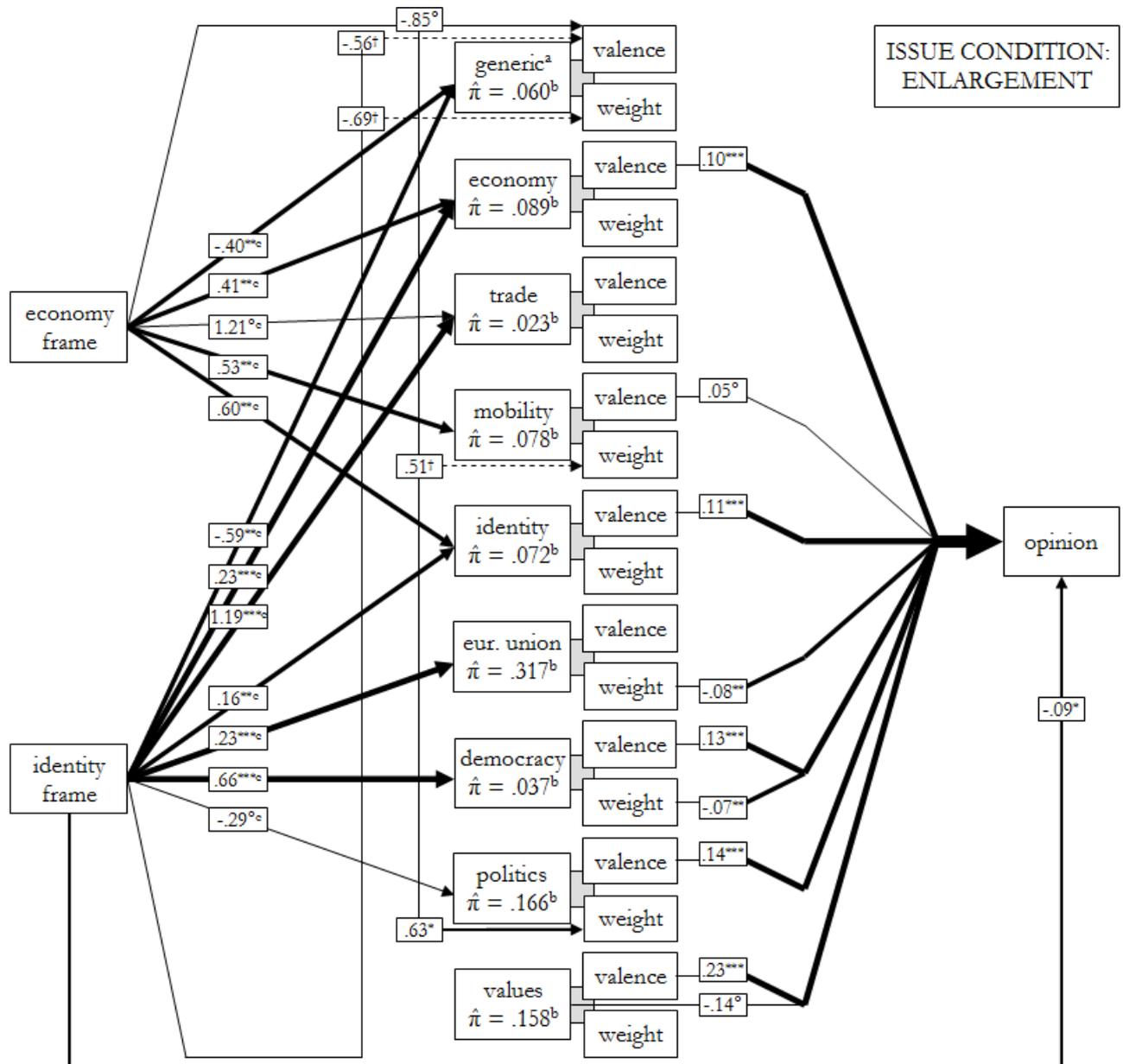
^a Predicting opinion, one of the domain dummies carries redundant information. Therefore, topic = 'definition' is omitted as reference category, and can not show effects.

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

^c predicted probability change if frame is present (reference category: control), keeping all other variables at mean

Figure 2.

Associations about EU enlargement.



Notes: Significance levels: *** $p < .001$; ** $p < .005$; * $p < .01$; ° $p < .05$; for the prediction of valences/weights, also significance levels of $p < .1$ (marked †) are admitted.

^a Predicting opinion, one of the domain dummies carries redundant information. Therefore, topic = 'definition' is omitted as reference category, and can not 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), keeping all other variables at mean

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APPENDIX: FRAME MATERIALFrame conditions:

[1][2] Economy

[3][4] Identity

[5][6] Mixed

Valence conditions:

[1][3] Positive

[2][4] Negative

[5][6] Ambivalent

Issue condition: Euro[1] *Bedrijfsleven verwelkomt plannen Estse toetreding tot de Eurozone*[2] *Estse industrie tegen een eerdere toetreding tot de Eurozone*[3] *Esten verwelkomen plannen om eerder toe te treden tot de Eurozone*[4] *Esten willen niet hun munt opgeven voor de Euro*[5][6] *Estland wil eerder toetreden tot de Eurozone dan verwacht*

Tallinn (cba). Zeven jaar na de introductie van de Euro zou Estland het 14de EU land kunnen worden, dat de gemeenschappelijke munt gaat adopteren. Minister-president Andrus Ansip kondigde gisteren aan dat de regering overweegt vroeger dan gepland deel te nemen aan de Eurozone. “In de huidige situatie geloven wij dat Estland zich meer moet binden aan de Europese gemeenschap. De volgende logische stap zal nu zijn om de gemeenschappelijke munt te adopteren. We zijn er absoluut klaar voor.” Met [3][4][5][6] *slechts 1,3 miljoen mensen [5][6] en [1][2][5][6] een BBP van € 19,8 miljard* zou Estland een van de kleinste landen worden binnen de Eurozone.

[1] *Vanwege de hechte handelsrelaties met de andere EU lidstaten, in de eerste plaats Finland, verwachten experts een extra economische groei van een vroege deelname. Voornamelijk de Estse Kamer van Koophandel en de Brancheorganisatie voor het Midden- en Kleinbedrijf (EVEA) zijn erg enthousiast: “De Estse capaciteiten voor export zijn alles behalve uitgeput”, zei EVEA president Riivo Sinijärvi.*

[2] *De Estse industrie blijft echter sceptisch. Voor hen betekent deelnemen aan de gemeenschappelijke munt in de eerste plaats een hogere concurrentie druk. Verschillende banen, hoofdzakelijk in de productie, worden op het spel gezet. “Als we niet onze binnenlandse fabrikanten beschermen, dan zullen veel bedrijven hun deuren moeten sluiten”, waarschuwde Tarmo Krijs van het Estse syndicaat (ETTK).*

[3] *De publieke steun is groot voor de Euro, die gezien wordt als de laatste stap van de lange reis van het sovjet verleden naar een Europese familie. Indrek Treufeldt, journalist bij de Estse Televisie, vatte dat gevoel samen: "Het betalen met dezelfde munt als alle andere Europeanen is het fysieke bewijs dat we niet langer arme Oost-Europeanen zijn – we zijn eerste klas Europeanen."*

[4] *De herinnering aan het communistische verleden leidt echter tot oppositie tegen de plannen van de regering. Twee van de drie Esten zijn tegen het opgeven van de Estse Kroon na nog maar 16 jaar van onafhankelijkheid. "We zijn al zo een klein land, we moeten die dingen vasthouden die ons Ests maken," zei oppositie leider Edgar Siviisaar.*

[5] *Vanwege de hechte handelsrelaties met de andere EU lidstaten, in de eerste plaats Finland, verwachtten experts een extra economische groei van een vroege deelname. Echter, twee van de drie Esten is tegen het opgeven van de Estse Kroon. "We zullen hen ervan moeten overtuigen dat wij door de Euro niet onze Estse identiteit opgeven, maar dat het grote economisch voordelen kan brengen," zei de minister van financiën Ivar Padar.*

[6] *De publieke steun is groot voor de Euro die gezien wordt als de laatste stap van de Estse lange reis van het sovjet verleden naar een Europese familie. Echter, volgens de Estse industrie staan verschillende banen op het spel vanwege een verhoogde concurrentie druk. "De Euro zal bepaalde economische veranderingen doen versnellen, die nodig zijn als we een volwaardig Europees land willen worden," zei de minister van financiën Ivari Padar.*

Hoewel de uiteindelijke beslissing nog niet genomen is, heeft de huidige regering voldoende meerderheden om goedkeuring te krijgen van het parlement. Groen licht van de EU Commissie wordt verwacht voor maart.

Issue condition: Enlargement

[1] *Bedrijfsleven verwelkomt plannen Kroatische toetreding tot de EU*

[2] *Kroatisch industrie tegen een eerdere toetreding tot de EU*

[3] *Kroaten verwelkomen plannen om eerder toe te treden tot de EU*

[4] *Kroaten willen niet toetreden tot de Europese Unie*

[5][6] *Kroatië wil eerder toetreden tot de EU dan verwacht*

Zagreb (cba). Vijf jaar na de grote uitbreiding van 2004 zou Kroatië het 28ste land kunnen worden dat deel neemt aan de Europese Unie. Minister-president Ivo Sanader kondigde gisteren aan dat de regering druk uitoefent om een jaar eerder dan gepland toe te treden. "In de huidige situatie geloven wij dat de tijd is gekomen voor Kroatië om zich sterker te binden aan Europa. Wij willen een volwaardig lid worden van de Europese

Unie. We zijn er absoluut klaar voor.” Met [3][4][5][6] *slechts 4,5 miljoen mensen* [5][6] en [1][2][5][6] *een BBP van € 50,5 miljard* zou Kroatië een van de kleinste landen worden binnen de EU.

[1] *Vanwege de hechte handelsrelaties met de andere EU lidstaten, in de eerste plaats Oostenrijk, verwachten experts een extra economische groei van een vroege deelname. Voornamelijk de Kroatische Kamer van Koophandel en de Brancheorganisatie voor het Midden- en Kleinbedrijf (HUP) zijn enthousiast: “De Kroatische capaciteiten voor export zijn alles behalve uitgeput”, zei HUP president-directeur Alen Zepec.*

[2] *De Kroatische industrie blijft echter sceptisch. Voor hen betekent toetreding tot de Europese Unie in de eerste plaats een hogere concurrentiedruk. Verschillende banen, hoofdzakelijk in de productie, worden op het spel gezet. “Als we niet onze binnenlandse fabrikanten beschermen, dan zullen veel bedrijven hun deuren moeten sluiten”, waarschuwde Emil Tedeschi van het Kroatische syndicaat.*

[3] *De publieke steun is groot voor de toetreding, die gezien wordt als de laatste stap van de Kroatische lange reis van oorlogen naar de Europese familie. Zeljko Korpar, journalist bij de Kroatische Televisie, vatte dat gevoel samen: “Het toetreden aan den Europese Unie is net zoals het fysieke bewijs dat we niet langer bij de arme Balkan behoren – we zijn eerste klas Europeanen.”*

[4] *De herinnering aan de voormalige Joegoslavische republiek leidt echter tot oppositie tegen de plannen van de regering. Twee van de drie Kroaten zijn tegen het opgeven van de gehele soevereiniteit na nog maar 18 jaar van onafhankelijkheid. “Niet lang geleden vochten wij nog voor onze vrijheid en zelfstandigheid. We moeten die dingen vasthouden die ons Kroatisch maken,” zei oppositie leider Ivica Racan.*

[5] *Vanwege de hechte handelsrelaties met de andere EU lidstaten, in de eerste plaats Oostenrijk, verwachten experts een extra economische groei van een vroege deelname. Echter, twee van de drie Kroaten zijn tegen het opgeven van de gehele soevereiniteit. “We zullen hen ervan moeten overtuigen dat wij binnen de EU niet onze Kroatische identiteit opgeven, maar dat het grote economisch voordelen kan brengen,” zei de minister van buitenlandse zaken Kolinda Grabar-Kitarović.*

[6] *De publieke steun is goed voor de toetreding, die gezien wordt als de laatste stap van de Kroatische lange reis van oorlogen naar de Europese familie. Echter, volgens de Kroatische industrie staan verschillende banen op het spel, vanwege een verhoogde concurrentie druk. “De toetreding zal de economische veranderingen doen bespoedigen, die nodig zijn als we een volwaardig Europees land willen worden,” zei minister van buitenlandse zaken Kolinda Grabar-Kitarović.*

Hoewel de uiteindelijke beslissing nog niet genomen is, heeft de huidige regering voldoende meerderheden om goedkeuring te krijgen van het parlement. Groen licht van de EU Commissie wordt verwacht voor maart.

ENDNOTES

¹ A slightly different understanding is more popular in communication research, viewing nodes as whole beliefs and paths as some kinds of imagined connection between them. However, this view is less useful and less consistent than the one advocated here, because beliefs already necessarily involve linking concepts (Holyoak & Thagard, 1995); thus, imagining beliefs as nodes treats beliefs inadequately and raises the so far unanswered question what, if not beliefs, the links are made of.

² There was also a fourth, mixed condition, which will not be treated in this paper.

³ Education: measured as highest completed educational degree (5 steps); Political interest: “Generally speaking, how interested are you in politics?” (6 point scale), Need for cognition: measured by a ten item shortened battery adapted from Cacioppo, Petty, Feinstein, & Jarvis, 1996; European identity: “Would you consider yourself...? (Dutch only, Dutch and European, European and Dutch, European only)”; 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)

⁴ Since the dependent variable here varies only at level two, a multilevel design is not feasible because any random component would automatically achieve perfect prediction.

⁵ The role of definitional information cannot be assessed, since the dummy code for definitional information represents the baseline category against which the other eight categories are compared. However, taken separately, it is not significantly associated with opinion either.