Political Psychology

Political Psychology, Vol. 35, No. 2, 2014
doi: 10.1111/j.1467-9221.2012.00937.x

Affective Contagion in Effortful Political Thinking

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We offer a theory of motivated political reasoning based on the claim that the feelings aroused in the initial stages of processing sociopolitical information inevitably color all phases of the evaluation process. When a citizen is called on to express a judgment, the considerations that enter into conscious rumination will be biased by the valence of initial affect. This article reports the results of two experiments that test our affective contagion hypothesis—unnoticed affective cues influence the retrieval and construction of conscious considerations in the direction of affective congruence. We then test whether these affectively congruent considerations influence subsequently reported policy evaluations, which we call affective mediation. In short, the considerations that come consciously to mind to inform and to support the attitude construction process are biased systematically by the feelings that are aroused in the earliest stages of processing. This underlying affective bias in processing drives motivated reasoning and rationalization in political thinking.

KEY WORDS: affect priming, political thinking, motivated reasoning, mediation

Political scientists conventionally explain political behavior as the product of conscious deliberation, in which attitudes, beliefs, or other considerations are retrieved from memory and assembled through controlled thought processes into the primary determinants of subsequent political behavior. Three decades of research in the cognitive and neuro sciences challenge this view by developing and testing *affect-driven*, *dual-process models* of thinking and reasoning in which unconscious and uncontrolled affective processes drive behavior, either directly or indirectly through the generation of conscious considerations (Damasio, 1999; Davidson, Scherer, & Goldsmith, 2003; Forgas, 2001; Gazzaniga, 2005). Unconscious (implicit) processes operate outside of awareness, are spontaneous, fast, unreflective, and relatively effortless, whereas conscious (explicit) processes are intentional, slow, deliberative, and effortful. Moreover, conscious thinking always follows earlier unconscious processing. This article will report the results of two experiments designed to test a foundational hypothesis of our dual-process model of motivated political reasoning (Erisen, 2009; Kim, Taber, & Lodge, 2010; Lodge & Taber, 2000, forthcoming; Taber & Lodge, 2006): that conscious deliberation is heavily influenced by earlier, unconscious information processing through a mechanism we call *affective contagion*.

Published by Wiley Periodicals, Inc., 350 Main Street, Malden, MA 02148, USA, 9600 Garsington Road, Oxford, OX4 2DQ, and PO Box 378 Carlton South, 3053 Victoria, Australia

Unconscious stimulus events are ubiquitous in the real world (Bargh, 1997), where advertisers routinely manipulate implicit influences whether selling motorcycles or presidential candidates. Even more common than such intentionally manipulated persuaders are "incidental," more-often-than-not normatively irrelevant stimuli—mood or "sunny day" effects, for example—which will also influence how citizens form and express their political preferences. In the political arena, these include subtle political symbols such as judicial robes, physical characteristics of people, like skin color or height, and myriad contextual factors. All of these may influence behavior outside the awareness of citizens (Berinsky, Hutchings, Mendelberg, Shaker, & Valentino, 2010; Carter, Ferguson, & Hassin, 2011; Nosek, Graham, & Hawkins, 2010).

Psychological research on the effects of facial attractiveness on evaluations, attitudes, and behaviors provides a good initial example. Here, as in the stereotypic attribution of traits from gender, age, and race, the visage is instantly registered and spontaneously triggers attributions about the individual's character, attitudes, and behavior. Three large meta-analyses covering over 1,000 peer-reviewed psychological studies of physical attractiveness confirm significant experimental and correlational effects on a broad range of social attitudes and behaviors (Eagly, Ashmore, Makhijani, & Longo, 1991; Feingold, 1992; Langlois et al., 2000). These meta-analyses document that physically attractive people are perceived to be more sociable, dominant, extroverted, popular, warm-hearted, and over their career better paid.

Contextual cues also unconsciously influence attitudes and behavior. Berger, Meredith, and Wheeler (2008), for example, showed that support for local school budgets varied as a function of where people voted—whether in schools, churches, or firehouses—with voters more likely to favor raising taxes to support education if voting in schools, even controlling for voters' political views, neighborhood of residence, and other potential explanations. Clearly, the voters knew what building they were in, but they were not consciously aware of its influence. Ballot-order effects provide another example. In a meta-analysis of ballot-order effects, Schneider, Krosnick, Ofir, Milligan, and Tahk (2008) find evidence of a primacy effect on ballot position, where being listed first increased the vote count for 80% of candidates.

Given research demonstrating that even brief exposures to candidate faces can impact preferences (Todorov & Uleman, 2004), it was to be expected that "thin-sliced" stimuli too fast to be reliably noticed would find their way into advertising as hidden persuaders for the selling of the president. A particularly egregious example: In the 2000 presidential election campaign the Republican National Committee aired a TV ad nationwide 4,400 times, attacking Al Gore's prescription drug plan. When the final segment of the ad is run in *slow motion*, the word "RATS" pops out of the explicitly presented phrase "Bureaucrats Decide." The ad's creator said it was not his intention to create a subliminal ad, but rather to make the ad more visually interesting by flashing part of the word "bureaucrats" on the screen. "It was," he said, "just a coincidence" that the word bureaucrats was broken into two TV frames—BUREAUC and then RATS. Such denials notwithstanding, Weinberger and Westen's (2008) experimental test of the rats ad shows that Gore and his drug plan would be evaluated more negatively following brief exposure to the "rats" prime. Both inside the lab and in the real world, unnoticed as well as noticed-but-unappreciated priming effects like these are proving to be critically influential in how information is encoded, retrieved, interpreted, evaluated, and acted upon.

Were we to ignore the effects of implicit influences on citizen judgments, we would fail to appreciate Mendelberg's (2001) findings showing the subtle effect of racial cues in the 1988 Willie Horton ad; Brader's (2006) demonstration of the effects on preferences of upbeat music, smiling faces, and family togetherness, contrasted with dark, moody backgrounds, and threatening images in political ads; or the subtle effects of gender, race, height, and attractiveness on presidential candidate evaluations (Eagly et al., 1991). More insidious still, we would scoff at the Weinberger and Westen (2008) finding that the "RATS" ad changed political evaluations of Al Gore. Citizens

in fact are generally unaware of these, and many other, "priming events" (Gigerenzer, 2007; Gladwell, 2005).

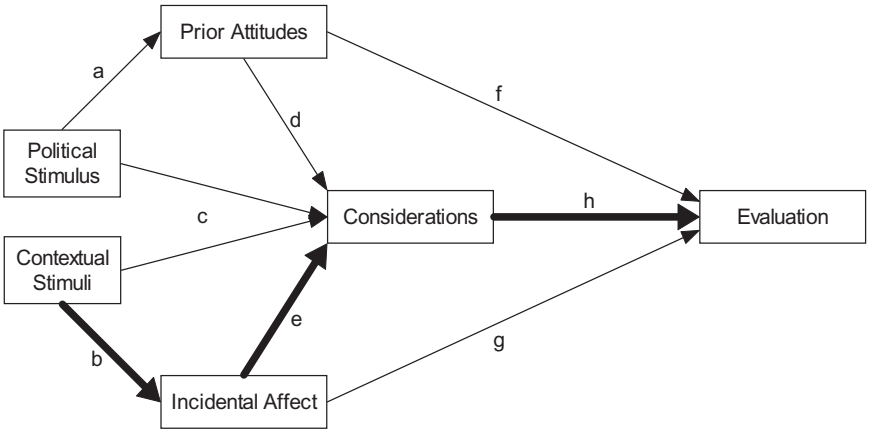
The implicit versus explicit distinction goes to the heart of our discipline's problems in accounting for how, when, and why citizens think, reason, and act as they do. The experimental literature presents clear evidence that implicit processes underlie *all* conscious processing and have been shown to be more valid predictors of top-of-the-head, like-dislike evaluations when affectively charged cognitions are available and strong; when explicit measures are tainted by social desirability, deceit, or prejudice; when one is under time pressure; when the costs of being wrong are low; when attention is otherwise engaged or distracted; when an environmental event is noticed but not recognized as being influential; and when one's behavior is not so consequential as to trigger questions about "why did I think, feel, say, or do that?" These situational and contextual factors characterize the world of politics for many citizens most of the time, where typically, the consequences of political action are distant and indirect, uncertainty reigns, rumination is rarely called for, rapid-fire media distract, and self-exposure to the stream of information routinely infuses one's thoughts with congenial cues.

A Dual-Process Theory of Motivated Political Reasoning

Our most fundamental theoretical assumption is that both affective and cognitive reactions to external and internal events are triggered unconsciously and spread activation in memory through associative pathways that link feelings to thoughts to behaviors (Anderson, 1983; Fazio, 2007; Lodge & Taber, 2005). It is only at the tail end of the decision stream that we become consciously aware of the associated thoughts and feelings generated moments earlier. It is only after the stream of processing is well underway that we experience what subjectively seems to be consciously initiated thinking and reasoning (Libet, 1985).

Exposure to an environmental or internal event triggers a variety of automatic mental processes within the first few hundred milliseconds of registration, beginning with a preconscious categorization/recognition process in which memory objects that "match" a stimulus receive direct activation. Very shortly thereafter, any feelings associated with these directly activated objects receive activation, so that initial positive and/or negative affect is aroused within the first 200 milliseconds (with our own studies showing that simple positive and negative valence toward political leaders, groups, and issues is energized in as little as 39 ms; Erisen, 2009; Lodge & Taber, 2005). Following Abelson (1963), we have called this automatic activation of feelings *hot cognition* (Lodge & Taber, 2005). As a function of the direct activation of objects and their associated affects, processing goals are established, most notably goals that motivate the depth and "direction" of downstream processing (e.g., accuracy goals drive deeper processing, while directional or "partisan" goals, triggered by affect, drive selective processing). This biased processing of political information as a result of affectively induced motivational goals is called *motivated reasoning* (Kunda, 1990; Redlawsk, 2001; Taber & Lodge, 2006). So the first preconscious steps down the stream of processing establish basic meaning, positive-negative affect, and motivational goals.

Shortly after the direct activation of memory objects by environmental stimuli, activation spreads along such well-traveled associative pathways from, say, Obama to Democrat, to President, to African American, with each connection enriching understanding of the original stimulus. Those concepts in memory that share valence with currently aroused affect and those with strong semantic associations to directly activated objects will receive more activation than affectively incongruent or weakly associated objects and so will enter the decision stream earlier and more forcefully. If called for, an explicit attitude may now be constructed from an integration of the positive and/or negative tallies linked to the activated considerations. Feelings associated with more distant, indirectly activated objects (perhaps, a weak pathway from Obama to Muslim) may also be aroused, potentially altering



a Hot Cognition
b Affect Priming
c Concept Activation
d Motivated Bias
e Affective Contagion
f Prior-Attitude Effect
g Affect Transfer/Mood Effect
h Construction of Evaluation

Figure 1. Affective contagion and the theory of motivated political reasoning.

the current affective state; however, since initial valence of affect influences the spread of activation more strongly along congruent pathways, initial feelings will favor the retrieval of affectively congruent considerations. Finally, the feelings associated with the stimulus object in memory may be updated by integration of the newly constructed attitude with preexisting affect, following the *online model* of attitude updating (Lodge, McGraw, & Stroh, 1989; Lodge, Steenbergen & Brau, 1995). All this processing—the establishing of affect, meaning, and intentions—is subterranean, operating outside of our awareness in under a second of time. As we will show in upcoming analyses, what comes to mind when voicing an opinion—as when responding to the NES open-ended question asking respondents to list their reasons for liking or opposing a policy proposal—will reflect what information is currently accessible in memory (Cassino & Erisen, 2010).

This article will focus on a core claim in our theory, that the accessibility of considerations in memory is biased by *affective contagion*—the facilitation of affectively congruent information and the inhibition of incongruent information. The considerations that come consciously to mind do not represent an impartial sampling of pro and con associations but are biased systematically by the feelings that were aroused in the earliest stages of processing, often by intrinsic affect (feelings associated with the objects of thought), but also by incidental affect (feelings aroused by unrelated environmental stimuli or prior mood). Positively valenced primes spread activation to considerations in memory that are themselves positively charged, while negative stimuli tend to activate negative considerations. In our theory, this underlying affective bias in processing drives motivated reasoning and rationalization in political thinking.

Figure 1 summarizes our theory of motivated political information processing with the critical hypothetical processes in bold. In our theory, a political stimulus that has received any attention in the past will activate prior attitudes (hot cognition) as well as semantic associations (concept activation). Prior attitudes toward political objects will bias the retrieval of considerations (motivated bias) and both directly (prior-attitude effect) and indirectly (construction of evaluation) influence subsequently reported evaluations (Taber & Lodge, 2006). While these processes will be engaged in

the experiments we report in this article, our primary focus is on the as-yet-untested hypotheses that the priming of incidental affect will also bias the retrieval of considerations (affective contagion) and indirectly influence subsequent political evaluations (path b-e-h in Figure 1).

A growing body of research already shows that "snap judgments" about a variety of social and political objects are strongly influenced by unnoticed cues. Such work focuses on the immediate and direct effects of unnoticed stimuli on judgments, attitudes, or simple behaviors (paths f and g in Figure 1). For example, Todorov, Mandisodza, Goren, and Hall (2005) found that competence judgments of real but unknown political candidates whose faces had been presented for a mere second predicted the outcomes and margins of victory of actual U.S. elections (for a different interpretation of the Todorov data, see Verhulst, Lodge, & Lavine, 2010). By contrast with this focus on immediate and direct effects, we are interested in this article in testing the influence of unconscious affective stimuli on the generation of thoughts and political deliberation, with downstream effects on a longer time-scale. We will put our *affective contagion hypothesis* to direct test in the context of conscious, deliberative thinking about illegal immigration and energy security. The content and character of considerations and thoughts, we expect, will be shaped by prior affect, even when that affect is completely incidental to the object of thought. In short, we test the hypothesis that unnoticed affective stimuli influence the course of conscious deliberation on political policies and ultimately drive attitudes toward these policies measured long after the direct memory effects of the stimuli have decayed. This long-term influence on subsequent attitudes is tested via an *affective-mediation hypothesis*.

Two Experiments on Incidental Affective Contagion and the Mediation of Evaluations

Design and Hypotheses

We theorize that implicit affect will bias conscious thinking about political issues. In line with a number of models of political-information processing (Wilson, 2002; Zaller, 1992), we expect that when experimental participants are asked to stop and think about a public issue or related policy proposals, their prior attitudes toward the issue will systematically impact what thoughts and feelings enter the decision stream (path a-d in Figure 1). We also predict that completely incidental and irrelevant affective stimuli presented outside the conscious awareness of our participants will bias the content and character of their thoughts (path b-e in Figure 1). In short, we expect that the conscious thoughts that come to mind for our experimental participants will be influenced by both their prior attitudes and incidental affective events. Moreover, the affectively congruent considerations that enter the decision stream subjectively validate and rationalize preferences, reliably leading to bias in the subsequent expression of attitudes on the issue. When this bias is triggered by affective priors, it is the source of motivated reasoning and attitude perseverance (Taber & Lodge, 2006); when triggered by irrelevant primes, it is the source of a different kind of rationalization that may undermine the "translating of opinion into action" that Kinder has called the "democratic imperative" (1998, 823). Both forms of bias raise important normative concerns. In this article, we focus on the influence of affective contagion from unnoticed and irrelevant contextual primes.

> *H1*: An *affective contagion effect*, such that an unnoticed positive prime will promote positive thoughts and inhibit negative thoughts, while an unnoticed negative prime will promote negative and inhibit positive thoughts.

In short, we expect that unnoticed affective primes (in our studies, smiling, frowning, or neutral cartoon faces presented for 39 milliseconds) will call to mind a biased sample of affectively congruent thoughts.

In line with our theory of affect-driven information processing, we expect that implicit affective primes will also influence reported attitudes and policy preferences on the political issues that people are asked to think about, as mediated by their thoughts (path b-e-h in Figure 1). That is, we hypothesize that incidental affective cues shape not only the sample of considerations that come to mind while thinking about a political issue, but these unnoticed primes also change subsequently reported attitudes and policy preferences on the issue, through the influence of the biased set of thoughts on attitudes and preferences.

H2: An *affective mediation effect*, such that affectively biased thoughts will enter into the construction of reported evaluations and promote prime-congruent policy preferences collected 30–40 minutes later at the end of the study.

We expect to observe both direct and indirect effects of prior attitudes on policy evaluations, labeled the prior-attitude effect (path f) and motivated bias of the construction of evaluations (path d-h) in Figure 1, and it is possible we will also find a direct effect of incidental affect on policy evaluations, which is called affect transfer when it is immediate and mood when it extends over minutes and hours (path g). Given the nature of our affective priming manipulation (repeated subliminal presentations of same-valence affect primes), this direct effect would most likely be the product of altered mood states. The activation triggered by our primes will have long since dissipated by the time policy evaluations are reported at the end of Study 2. A great deal of research, beginning with Neely's classic 1977 study of priming effects on memory accessibility, demonstrates that direct priming effects decay within a second or less, while the primes in our studies are presented at least 30 minutes before the collection of evaluations. Repeated presentations of primes, however, can have long-term effects by altering baseline levels of activation for concepts or by strengthening associations in memory (Sohlberg & Birgegard, 2003).

This research goes well beyond what has been reported in the political psychology, political behavior, or social psychology literatures. As opposed to effects on snap judgments, we ask whether preconscious affect influences how people think and reason when called on to deliberate on political issues and policy recommendations. We predict that unnoticed, peripheral events shape political preferences *even when people think deeply* about an issue and its consequences. Should we find this result, it would be the strongest evidence to date that conscious rumination is not—indeed, cannot be—the solid foundation for rational political action it is conventionally thought to be.

Subliminal priming is widely used in contemporary psychological studies (and in many of our recent experiments on political judgments and evaluations) because it allows us to cleanly measure automatic effects on evaluative and cognitive processes. Though some truly subliminal effects undoubtedly occur in the political wild (as with the 2000 RATS ad), our purpose is not to demonstrate the power of subliminal messages. Rather, we are interested in how a wide range of incidental or manipulated affective cues (flags or other symbols, music in campaign ads, canned laughter or applause, candidate appearance, the weather) shapes our political thoughts outside of our awareness. The subliminal priming procedure allows us to unambiguously demonstrate that the effects of our affective primes on thinking and attitude change are truly unconscious.

Experiment 1: A Test of Affective Contagion

Participants and procedures. Study 1 was conducted in Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in Political Science courses, and they received subject pool credit for their participation (N = 224; 48% male; 43% white; 50% greater than 21 years of age; 55% Democrat, and 18% Republican, 27% independent).

Following consent procedures, participants were seated in front of personal computers in individual experimental rooms. Their first task was to report attitudes on a number of political issues including the target issues of illegal immigration and energy security (Figure 2). Item batteries asked for their overall evaluations of these (and other) issues and the attitude strength dimensions of accessibility, certainty, extremity, importance, knowledge, and relevance (Krosnick & Petty, 1995; Wegener, Downing, Krosnick, & Petty, 1995).

To guarantee that any influence of the affective primes was truly unconscious, we employed a subliminal priming paradigm (Bargh, 2007) in which participants could not consciously see the primes. The primes were simple cartoon faces (smiley, frowny, and neutral), which represent a generic, nonsemantic form of affect. They stand in for such real-world primes as a U.S. flag in a campaign ad, upbeat music, and balloons at a party convention, without triggering the semantic associations that these political primes would also convey. Importantly, since these affective primes have no semantic meaning for the recipient, they should only prime affective but not semantic associations. Given these subliminal primes, we can be sure that any influence on explicit thoughts is unconscious, affective, and incidental to the object of thought.

To show the influence of these subliminal affective primes on the retrieval of considerations about political issues, we engaged subjects in a cued thought-listing procedure (Cacioppo & Petty, 1981; Erisen & Erisen, 2012; Gamson, 1992; Lane, 1969; Zaller & Feldman, 1992). Immediately following exposure to a prime, a political-issue statement appeared with an empty response box below, and participants were instructed to type a single thought in response to the political prompt. When a participant completed her thought, another prime exposure and thought-listing sequence was presented, up to maximum of 10 thoughts per issue. Subjects provided up to 10 thoughts on illegal immigration, and then up to 10 thoughts on energy security policy, with a presentation of the same smiling, neutral, or frowning face prime before each thought. This procedure resulted in varying exposure to the prime manipulation, with participants exposed to between 2 and 20 presentations of the prime and typing 0 to 20 thoughts (0 if they offered no thought in the first response box for both issues).

On each trial, a grid was presented on the screen for a full second to focus the participant's attention on the exact location of the upcoming prime. Then a forward mask was presented for 13 ms to ensure that all participants start with no meaningful image in visual sensory memory. The prime (smiley, frowny, or neutral cartoon face) was then presented for 39 ms, which is well below the threshold for subjective conscious awareness but above the objective threshold for sensory and brain reaction. A backward mask followed for 13 ms to wipe clean visual sensory memory and ensure that the image of the prime remained below the threshold of subjective conscious awareness. After the priming procedure, the issue prompt appeared in the same screen location with a thought-listing box below.

Participants were randomly assigned to one of three experimental groups. One-third of the sample consistently received negative affective primes (the frowning cartoon face), one-third received positive affective primes (smiling cartoon face), and one-third received neutral primes (expressionless cartoon face with no mouth).[1]

In this study the general prompt for thoughts on illegal immigration was: "The number of illegal immigrants coming to the U.S. will drastically increase in six years." For energy security the general prompt was: "The extent of energy consumption and the need for energy resources in the United States will drastically increase in the next decade."

After this priming and thoughts-listing procedure was completed, participants answered political knowledge and demographic questions, followed by a second administration of the attitude battery. Finally, subjects were debriefed and asked questions to verify that they were not consciously

[1] Pretests showed that straight mouths were perceived negatively, while no-mouth faces were perceived as neutral.

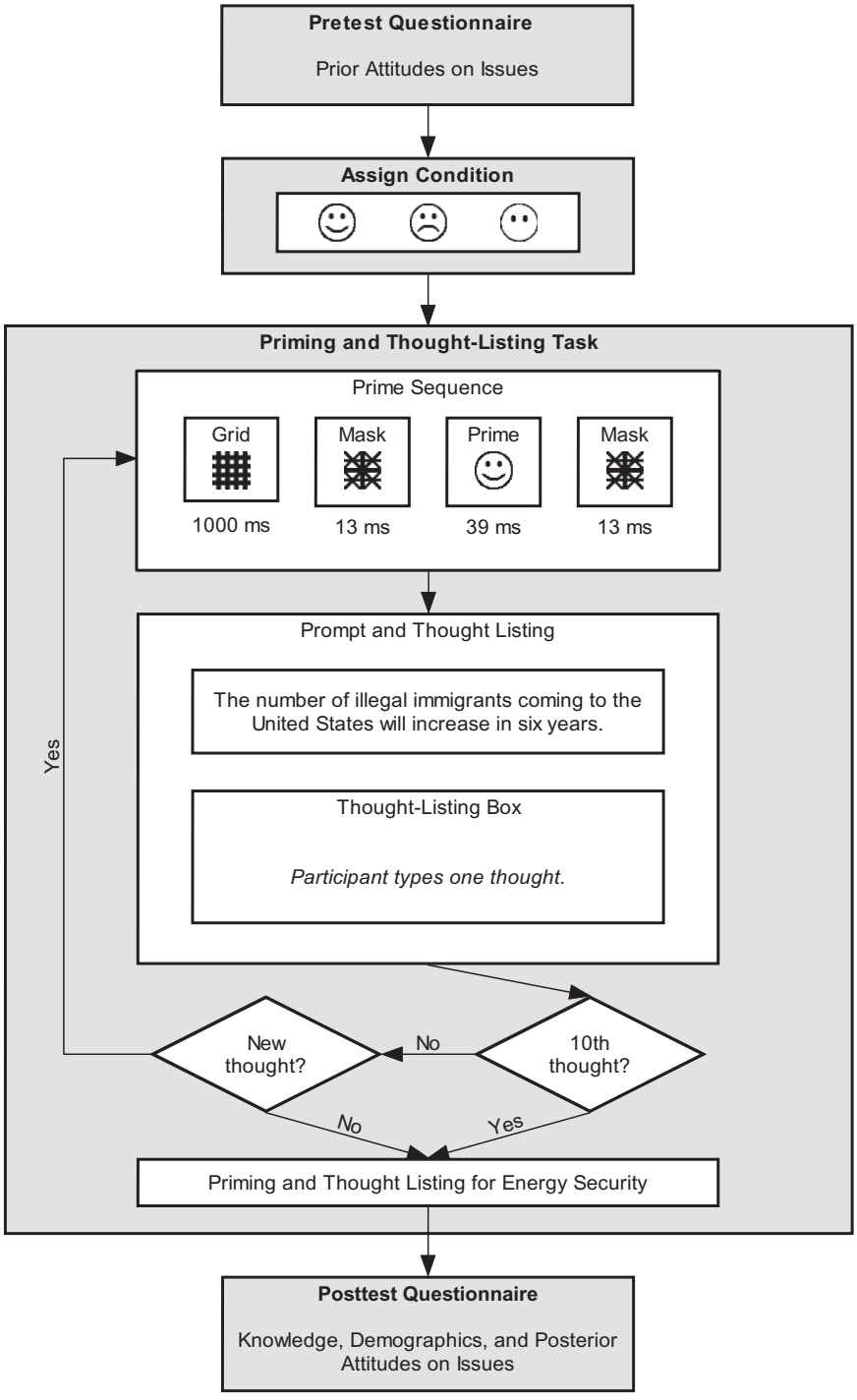


Figure 2. Procedure for experiment 1.

aware of the primes and could not guess the study purposes. None of the participants reported having been aware of the affective primes, and none reported any suspicion of our aims. Nearly all participants thought that we were simply measuring their attitudes on illegal immigration and energy security.

Coding and variables. Our measurement of attitudes relies on the general evaluation of the targeted issues and the attitude strength dimensions of relevance, certainty, importance, knowledge, and accessibility (Krosnick & Petty, 1995). *Attitude position* on the issue is computed as the arithmetic mean of six attitude-position items (three opposing and three supporting arguments) on each issue and an additional general-position item (all items and experimental materials are available upon request). This measure, which ranges from −3 (opposition) to +3 (support), is very reliable for illegal immigration ($\alpha = .86$), but less so for energy security ($\alpha = .60$). We computed *attitude strength* as the arithmetic mean of items on issue relevance, certainty, importance, knowledge, and accessibility. This measure ranges from 0 (weak) to 1 (strong) and is reliable for both illegal immigration ($\alpha = .86$) and energy security ($\alpha = .85$). Theoretically, we view a general attitude on an issue as a multiplicative function of position and strength (Fishbein & Ajzen, 1975), so we compute our general *prior-attitude measure* as the product of attitude position and strength, yielding continuous variables ranging from −3 to +3 with a neutral attitude position of 0. When we refer to prior or posterior attitudes in this article, we mean this multiplicative variable collected either at the beginning or end of the study. Finally, we divide this attitude scale into three groups: opponents (including those below the neutral 0 point of the scale), moderates (including those at the neutral 0 point), and supporters (including those above the neutral 0 point). While the attitude measure for illegal immigration approximates a normal distribution centered on the [−3, 3] scale ($M = .11$, $SD = 1.00$), those for energy security are skewed in a positive direction ($M = .53$, $SD = .60$). A majority of our sample supports energy security policy, and for that reason we generated just two groups on the energy security prior attitude, supporters versus moderates and opponents combined.

Two judges, blind to the experimental conditions and unaware of the research hypotheses, coded the listed thoughts for affective valence, giving us measures of the number of positive and negative thoughts offered by each participant. Intercoder reliability was .92 and the few disagreements were resolved by discussion.[2] For instance, "they can come here and make good money" and "the U.S. is a nation that prides itself on being a melting pot of cultures" were categorized as positive immigration thoughts. In contrast, "we need stricter laws and regulations to keep illegal immigrants from entering our country" and "the United States will better our security by closing down the border" were coded as negative thoughts.

In short, we have general-attitude measures on illegal immigration and energy security, counts of the number of positive and negative thoughts listed for each issue, and we manipulate exposure to positive, negative, or neutral affective primes (coded 1, 0, and .5, respectively) during the thoughts-listing task.

Results for affective contagion. We expect that the purely affective primes will influence retrieval and construction of thoughts in response to a general-issue statement, and this bias will be in the direction of congruence with the valence of the primes.

We turn first to the question of whether affective primes influence the valence of thoughts that come to mind for illegal immigration. The numbers of negative and positive thoughts elicited by the general statement on illegal immigration are reported in Table 1, broken down by prior attitude and experimental condition. An analysis of variance (ANOVA) on the number of negative thoughts revealed a marginally significant main effect for prior attitude, $F(2, 182) = 2.92$, $p < .06$, and a very significant main effect for the priming condition, $F(2, 182) = 8.97$, $p < .001$, with no significant

[2] Thoughts that were irrelevant to the provided statement were excluded from the coding procedure. Also, those who did not report any thoughts in total for the provided statement are excluded from the statistical analysis.

Table 1. Numbers of Positive and Negative Thoughts in Study 1 by Prior Attitude and Priming Condition

General Prompt on Illegal Immigration				
Supporters of Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N = 38)	2.14	1.56	1.11	1.07
Neutral Primes (N = 17)	1.35	1.14	1.62	1.62
Negative Primes (N = 19)	0.92	0.97	2.34	2.17
Opponents of Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N = 28)	1.29	0.93	1.63	1.34
Neutral Primes (N = 37)	1.00	0.79	1.82	1.67
Negative Primes (N = 38)	0.84	1.21	3.26	2.56
General Prompt on Energy Security				
Supporters of Energy Security				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N = 54)	1.59	1.07	1.15	1.02
Neutral Primes (N = 45)	1.20	0.87	1.36	1.17
Negative Primes (N = 46)	0.57	0.65	1.89	1.62
Moderates and Opponents of Energy Security				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N = 18)	1.89	1.08	0.89	1.08
Neutral Primes (N = 15)	1.60	1.18	1.20	1.37
Negative Primes (N = 16)	0.75	0.68	1.38	0.81

interaction. Similarly, an ANOVA on positive thoughts found main effects for prior attitude, $F(2, 182) = 3.57$, $p < .05$, and priming condition, $F(2, 182) = 8.89$, $p < .001$, with no interaction. As expected (path a-d in Figure 1), our participants' prior attitudes on illegal immigration influenced the generation of thoughts in a congruent direction. More surprising from a conventional point of view, we found evidence of affective contagion from the incidental primes (path b-e in Figure 1). Planned contrasts verify that both of these effects are in the expected direction, and we now turn to a closer examination of the pattern of means for the novel affective contagion findings.

Based on our research hypothesis, we expect that the arrangement of the means should be linear across experimental priming conditions for negative and positive thoughts listed by the participants.[3] Using ANOVA plots, we found that the means for negative and positive thoughts on illegal immi-

[3] For instance, the pattern of the means for the number of negative thoughts should be linear in the following way: those in the negative prime condition should report more negative thoughts in comparison to those in the positive prime condition, and the mean value for those in the neutral condition should be in between the two prime conditions. The opposite pattern applies to the number of positive thoughts. To test the linear pattern, we assigned the following weights to the prime conditions: 1, 0, −1.

gration do indeed have a linear pattern. Next, we compared the specific means for statistical significance across the prime conditions. On the number of negative thoughts listed for illegal immigration, the planned contrast revealed that the negative prime condition generated more negative thoughts than did the positive prime condition, $F(1,187) = 17.41$; $p < .01$. The mean level of negative thoughts was higher in the negative prime condition (M = 2.53; SD = 2.27) than in the neutral prime condition (M = 1.69; SD = 1.59), t = 2.33 ($p < .02$), Tukey HSD = 3.84, and it was also higher than in the positive prime condition (M = 1.40; SD = 1.24), t = 3.54 ($p < .01$), Tukey HSD = 5.15. The planned contrast for the number of positive thoughts also showed that the positive prime condition generated more positive thoughts than the negative prime condition, $F(1,187) = 17.45$; $p < .01$. The mean level of positive thoughts was higher in the positive prime condition (M = 1.64; SD = 1.29) than in the neutral prime condition (M = 1.22; SD = 1.03), t = 1.99 ($p < .05$), Tukey HSD = 2.96, and it was also higher than in the negative prime condition (M = 0.90; SD = 1.02), t = 3.60 ($p < .01$), Tukey HSD = 5.25. In line with our expectations, the linear contrast fits the mean pattern quite strongly, and the planned comparisons present strong evidence for the affective contagion effect.

Since we find, and our theory predicts, that *both* prior attitudes and incidental affective primes drive the generation of issue thoughts, we should compare the relative strengths of these effects. To that end, we calculate the effect size for our ANOVA models: The effect size (Cohen's *f*) of the affective prime manipulation for both ANOVA models was .31, a medium-to-large effect. By contrast, the effect size for prior attitudes was small for both positive (.20) and negative (.18) thoughts. For illegal immigration, incidental affective primes had a *greater* influence on the generation of thoughts than prior attitudes.

In sum, we found that participants who had negative prior attitudes on immigration generated more negative and fewer positive thoughts than those with more positive attitudes on the issue, while those with positive priors showed the expected opposite pattern. More interesting than this rather conventional result, the *subliminal presentation of smiling and frowning cartoon faces strongly and significantly promoted affectively congruent thoughts* on illegal immigration, and this effect was *not* washed out by the power of prior attitudes. In support of the substantive power of affective congruence, participants in our first study listed on the order of *twice* as many thoughts that were congruent with the prime as those that were incongruent, regardless of their prior attitude on the issue.

Much the same result obtains for energy security, though with weaker effects for prior attitudes (Table 1). The affective priming manipulation strongly influenced the valence of thoughts recalled in response to the general energy-security prompt, with again roughly twice as many congruent as incongruent thoughts, relative to the control group. An ANOVA on the number of negative thoughts found a significant main effect only for prime condition, $F(2, 190) = 5.09$, $p < .01$, and not for prior attitude. The same analysis on the number of positive thoughts found a marginally significant main effect for the prior attitude, $F(1, 190) = 3.70$, $p < .06$, and a very significant main effect for the prime condition, $F(2, 190) = 22.40$, $p < .001$. Again, there were no significant interactions.

Our planned contrasts on the linear pattern of the means and the planned comparisons between the means were again significant for the general statement on energy security: the negative prime condition generated more negative thoughts than the positive prime condition, $F(1,194) = 10.00$; $p < .01$. The mean level of negative thoughts was higher in the negative prime condition (M = 1.76; SD = 1.47) than in the neutral prime condition (M = 1.32; SD = 1.21), t = 1.80 ($p < .07$, a marginally significant effect), Tukey HSD = 2.86, and it was also higher than in the positive prime condition (M = 1.08; SD = 1.03), t = 3.13 ($p < .01$), Tukey HSD = 4.38. We found similar results for the number of positive thoughts in which the positive prime condition generated significantly more positive thoughts than the negative prime condition, $F(1,194) = 44.07$; $p < .01$. The mean level of positive thoughts was higher in the positive prime condition (M = 1.67; SD = 1.07) than in the neutral prime condition (M = 1.30 SD = 0.96), t = 2.07

($p < .04$, Tukey HSD = 3.20) and it was also higher than in the negative prime condition (M = 0.61; SD = 0.66), t = 6.77 ($p < .01$), Tukey HSD = 9.20. Once again, we find confirming evidence for the affective contagion effect.

Moreover, the effect size (Cohen's *f*) of the affective prime manipulation for these ANOVA models was on average .36, a large effect, while the effect size for prior attitudes was a rather meager .12. Once again, not only was there significant affective contagion from an incidental affective prime, it was of *greater magnitude* than the more conventional prior-attitude effect.

In short, we find strong support for our affective contagion hypothesis for both issues. Regardless of one's prior attitude, in comparison with the control group, negative primes promote negative thoughts and inhibit positive thoughts, while positive primes trigger positive and inhibit negative thoughts. Simple cartoon faces flashed outside the conscious awareness of experimental subjects significantly and consistently altered their thoughts and considerations on a political issue, with effects greater in size to those of prior attitudes on the issue.

What we have not yet answered, however, is whether these thoughts have any measurable impact on subsequent political attitudes and policy evaluations, measured long after the direct impact of affective activation on long-term memory has decayed. Our first study includes posterior measures of global attitudes on illegal immigration and energy security, and we can test for indirect effects of prior attitudes and the priming manipulation on posterior attitudes as mediated through the generation of thoughts. Since the posterior and prior measures are identical by construction and are very strongly related empirically, this proves to be an impossibly stringent test for the detection of indirect paths. For this reason, we designed a second experiment to test for the direct and indirect effects of prior attitudes and incidental affective primes on evaluations of a set of specific policy recommendations on the issue of illegal immigration.

Experiment 2: A Replication of Affective Contagion and a Test of Affective Mediation

Participants and procedures. Study 2 was conducted in Stony Brook University's Laboratory for Experimental Research in Political Behavior. All participants were undergraduate students in Political Science courses, and they received subject pool credit for their participation (N = 125; 60% male; 42% white; 50% over the age of 21; 52% Democrat, 20% Republican, and 28% independent).

Following informed consent, participants were seated in front of personal computers in individual experimental rooms. Attitudes on a number of political issues, including the target issue of illegal immigration, were collected before and after the experiment (Figure 3).

The priming and thoughts-listing procedure in Study 2 was similar to the previous one, with two key differences: In this study, we exposed all participants to a fixed rather than variable number of primes and prompted thoughts listing with six specific policy statements on illegal immigration rather than a single general-issue statement. The procedure for each priming trial remained the same, involving in sequence a one-second attention grid, a 13-ms forward mask, a 39-ms affective prime, and a 13-ms backward mask, followed by the prompt and thoughts-listing box.

In this study, all participants were presented with seven prime/thought-listing trials for each of six different policy prompts on illegal immigration, although they were not required to enter a new thought into each box before moving to the next one. This resulted in a fixed total of 42 prime presentations and collection of 0–42 thoughts. There was no second issue.

The policy statements used as thought prompts included three anti-illegal immigrant statements:

- "All illegal immigrants should be deported";
- "The Minutemen group should be supported by the government"; and
- "Illegal immigrants should be stopped from entering the US by building more fences."

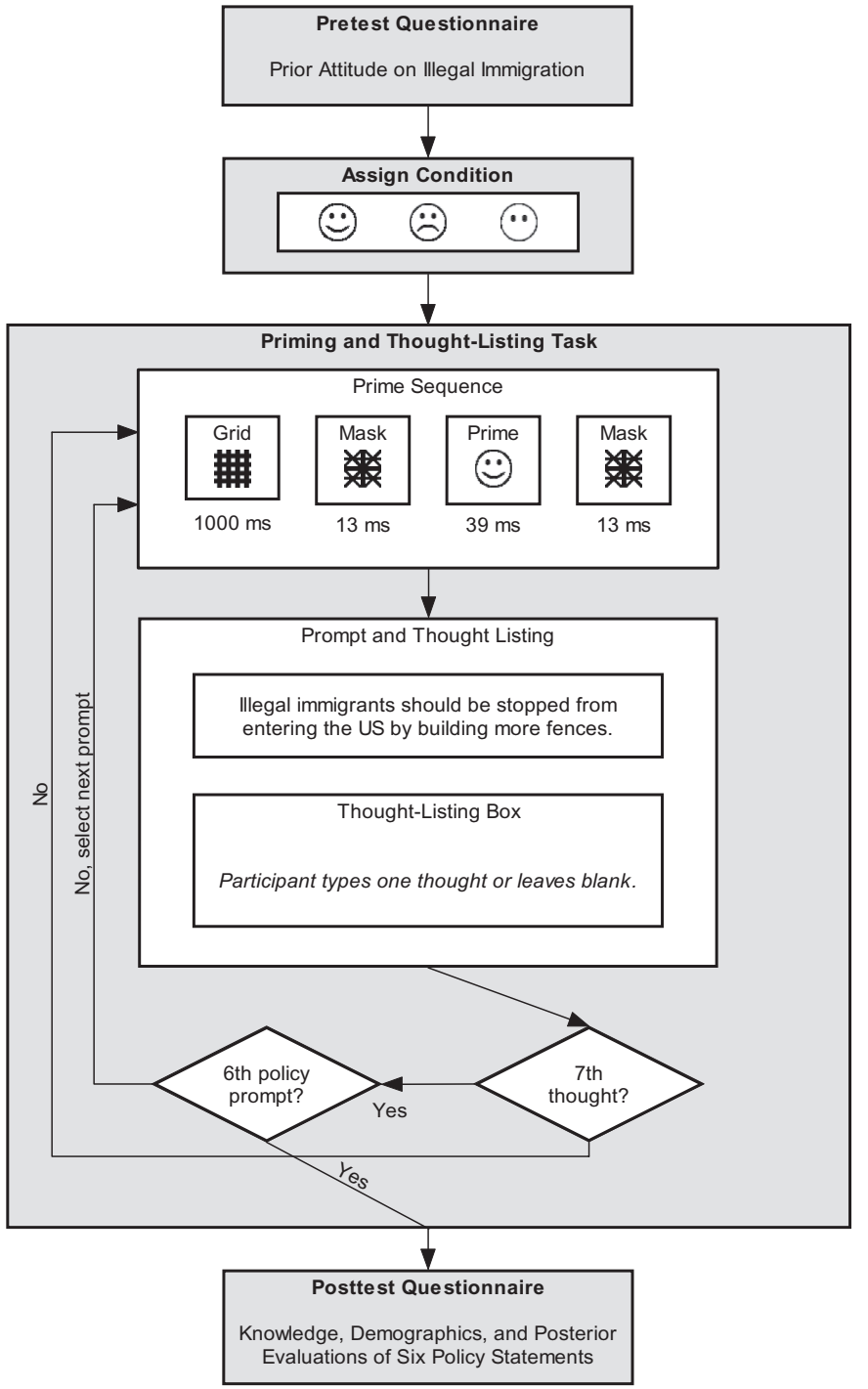


Figure 3. Procedure for experiment 2.

There were three pro-illegal immigrant policies:

- "Illegal immigrants in the US should be allowed citizenship if they learn English, have a job and pay taxes";
- "Temporary visas should be granted to immigrants not in the US so they can do seasonal/temporary work and return to home countries"; and
- "Illegal immigrants already here should be allowed to stay permanently."

These prompts were presented in random order.

Participants were randomly assigned to three experimental groups. One-third of the sample consistently received negative affective primes (a frowning cartoon face), one-third received positive affective primes (smiling cartoon face), and one-third received neutral primes (expressionless cartoon faces with no mouth), and these primes were again incidental in both a semantic and political sense.

On completing this priming and thoughts-listing procedure, participants answered political knowledge and demographic questions, followed by collection of their evaluations of all six policy statements, and then a second administration of the pretest attitude battery. Finally, subjects were debriefed and asked questions to verify that they were not consciously aware of the primes and could not guess the study purposes. None of the participants reported having been aware of the affective primes, and none reported any suspicion of our aims.

Coding and variables. Prior attitudes on illegal immigration were collected and coded as described for Study 1, yielding reliable measures of attitude position ($\alpha = .82$) and strength ($\alpha = .87$). Prior attitudes were computed as the product of position and strength and coded to range from −3 to +3 with a true neutral point at 0.

After the thoughts-listing task was complete, we also collected evaluations of the six policy proposals for illegal immigration listed above as thought prompts. Because of high levels of policy ambivalence in our sample, we constructed separate anti- and pro-immigration policy evaluation variables as the arithmetic means of the three anti- and pro-immigration policy items. Both three-item scales, which range from −3 to +3, were reliable: for anti-immigration policies, $\alpha = .73$, and for pro-immigration policies, $\alpha = .74$. These policy evaluations provide our key dependent variables for the affective mediation analyses.

The thoughts collected in response to the anti- and pro-immigration policy statements were coded for affective valence by two judges who were unaware of the experimental conditions and the research hypotheses, yielding measures of the number of positive and negative thoughts offered by each participant in response to each type of policy prompt. Intercoder reliability was .89 across all thoughts.

In short, we have general prior-attitude measures on illegal immigration, counts of the number of positive and negative thoughts listed for each policy statement, which we aggregate into thoughts for pro- and anti-immigration policies, and we manipulate exposure to positive (coded 1), negative (0), or neutral (.5) affective primes during the thoughts-listing task. Finally, we have participants' evaluations of the six policy statements, collected after the experimental priming and thought-listing task, aggregated into evaluations of pro- and anti-immigration policies.

Results for affective mediation. In addition to the direct and indirect effects of prior attitudes on posterior policy evaluations, which are predicted by our theory (Figure 1) as well as by many conventional models of political behavior, we hypothesize that the incidental affect aroused by our priming manipulation will bias the generation of thoughts, and these thoughts will influence subsequent policy evaluations. The first step in this indirect causal pathway replicates affective contagion with a new experiment and sample, while the second step completes the indirect causal process we call affective mediation.

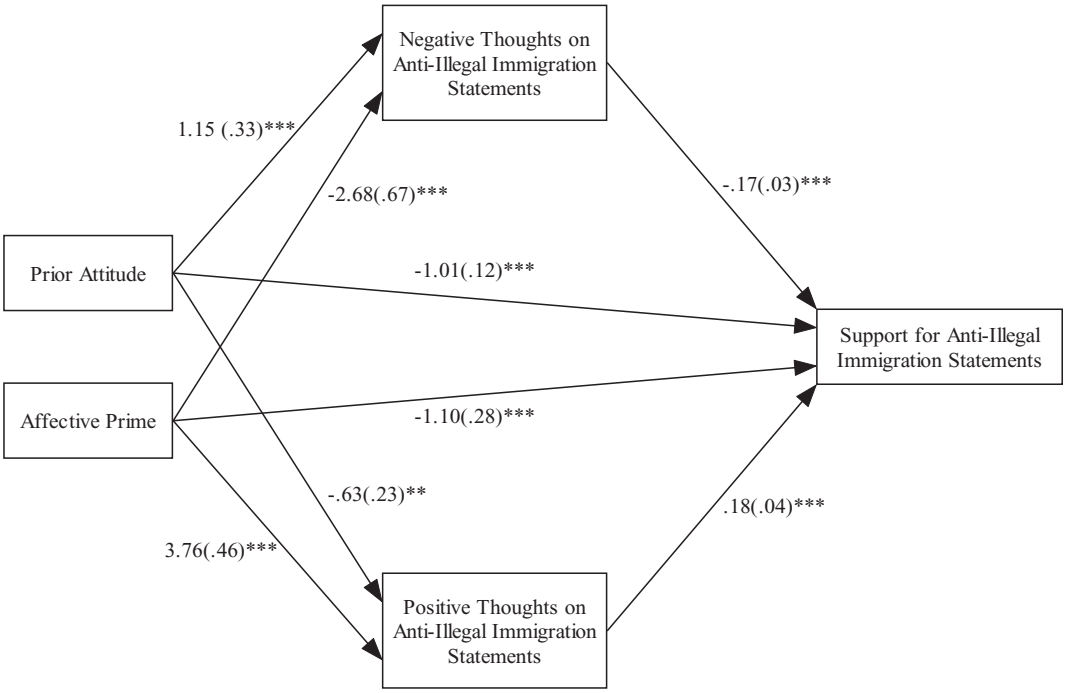


Figure 4. Path analysis of direct and indirect effects of prior attitude and prime manipulation on posterior anti-immigration policy evaluations.

Figure 4 reports a path-regression analysis for anti-immigration policy statements, and Figure 5 shows the same analysis for pro-immigration statements.[4] The pro and anti policy statements must be analyzed separately because in our theory pro and anti statements are predicted to trigger different affects and considerations, and we would not be able to observe these theorized differences if we combined these into a single dependent variable. For these reasons, we present two separate models in which the independent effects of the affective primes and prior attitudes can be clearly discussed.

As a first important point, it is clear that our affective contagion findings from the previous experiment are replicated in this one. For both anti- and pro-immigration policy statements, the valence of thoughts generated is very much influenced by the subliminal affective primes, and this effect is two to three times larger than the effect of prior immigration attitudes on the valence of thoughts.[5] Combined with our results from the first experiment, this is powerful support for the affective contagion hypothesis. Surprisingly, fleeting cartoon images of smiley or frowny faces have a *greater* immediate effect on the affective balance of thoughts than do prior attitudes on the issue, even for an issue as compelling as illegal immigration. But does this immediate effect on thoughts influence downstream policy evaluations?

[4] A path regression is a number of regression models conducted consecutively. We first regress the number of negative and positive thoughts as dependent variables on the affective primes and prior attitudes. Next, we regress policy evaluations on the number of negative and positive thoughts and the prior attitude. Given these qualities of path analysis, the standard linear-regression interpretation is valid for our models.

[5] Because these are the first-step coefficients in the path analysis, we simply compared the coefficients in which the dependent variable is the number of thoughts whereas the affective prime and the prior attitude are the independent variables. For instance, in Figure 4, the effect of affective prime on positive thoughts about anti-illegal immigration is 3.76 as opposed to the effect of the prior-attitude coefficient, –.63. There is a six-fold difference for this comparison. Similarly for the negative thoughts on the same statements, comparing –2.68 to 1.15 there is a two-fold difference between the affective prime and prior-attitude influence.

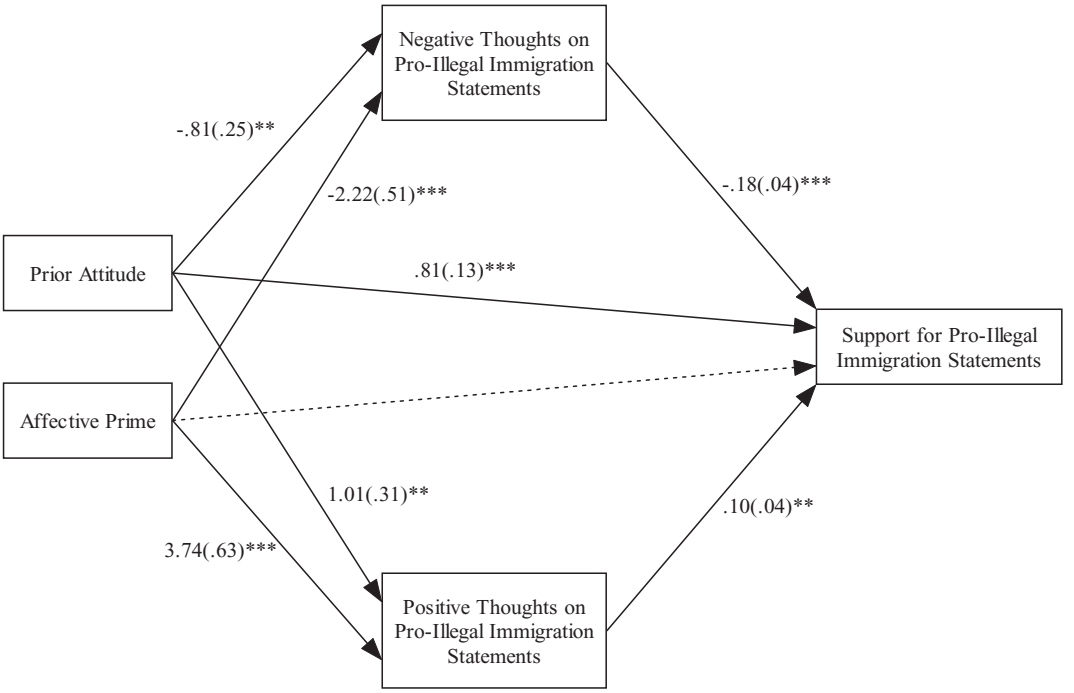


Figure 5. Path analysis of direct and indirect effects of prior attitude and prime manipulation on posterior pro-immigration policy evaluations.

The answer to this even more unconventional question is clear. Both analyses show strong support for our affective mediation hypothesis. Negative thoughts about a policy reduce support for that policy, while positive thoughts increase support, and these effects propagate the influence of both prior attitudes and the affective prime onto the policy evaluations collected at the end of the experimental session. For anti-immigration policies (Figure 4), the indirect effect of the prime on support is 1.13, while the indirect effect of prior attitude is −.31. Since the direct effect of prior immigration attitudes on evaluations of anti-illegal immigration policies is −1.01, the total effect of prior attitudes is −1.32.

There is an interesting anomaly, however, in the strong and significant negative direct effect of prime on posterior support for anti-illegal immigration policies, which is nearly exactly the same size but in the opposite direction of the indirect effect. That is, we find that subliminal exposure to smiley (frowny) faces while generating policy thoughts significantly reduces (increases) subsequent support for building walls or deporting illegal immigrants, measured 30-45 minutes later. Given what is known in cognitive psychology about the fleeting duration of concept activation (Barsalou, 1992; Eysenck & Keane, 2010; Neely, 1977), this result may be interpreted as a mood effect. Participants in the positive condition are put in a positive frame of mind by subliminal exposure to 42 smiling faces, while those in the negative condition feel more diffuse negativity, and this occurs in much the same way as the sunny day effect on reported life satisfaction. The positive mood makes subjects less likely to support "nasty" immigration policies, while those in a negative mood are more inclined to punish illegal immigrants. Unfortunately, we cannot put this interpretation to direct test in these experiments since we do not have any measures of posttreatment mood. We (Erisen, 2009; Erisen, Lodge, & Taber, 2009) found small but significant effects on measures of posttreatment mood in other experiments that used smiling and frowning cartoon faces as subliminal primes, suggesting that

our primes probably did influence participant mood. Interestingly, we find this mood effect *only* for participants below the median in political knowledge, with more sophisticated participants showing no significant direct effect of prime on evaluations of anti-immigration policies.

We do not find a mood effect for pro-immigration policy evaluations, even among less sophisticated respondents. Figure 5 shows exactly the same overall pattern of results that we found for anti-immigration policies. Negative thoughts about a policy reduce support for that policy; positive thoughts about a policy increase support. Since these thoughts are driven by prior attitudes and even more strongly by the incidental primes, we find significant and sizable indirect effects of prior and prime on posterior policy evaluations. The indirect effect of prior attitudes on posterior policy evaluations is .25, which combines with the direct causal path for a total effect of 1.06. The indirect effect of prime on posterior policy evaluations is .77. Taken together, the analyses reported in Figures 4 and 5 strongly support our affective mediation hypothesis.

Conclusion

In this article we tested two important and heretofore unexplored implications of our theory of motivated political reasoning (Lodge & Taber, 2000, forthcoming; Taber, 2003; Taber & Lodge, 2006). We found strong evidence that incidental, unnoticed events can alter the course of information processing, with measurable impact on political thinking. These affective primes, in our studies chosen to be politically irrelevant and semantically unrelated, cause valence-congruent considerations to be retrieved or constructed in the course of thinking about a political issue on which our respondents already had strong attitudes. The balance of thoughts in turn has a large and robust effect on evaluations of specific policy recommendations. It seems hard to escape the conclusion that much of the conscious political thinking and deliberation that we conventionally treat as causally prior to our attitudes and policy positions, in fact rationalizes the joint effect of these attitudes and any contextual affective primes on our thinking, all outside of our awareness. "I feel, therefore I am" would seem closer to the truth!

Our theory claims, and our empirical studies show, that the feelings aroused in the initial stages of processing color *all* phases of political thinking. When a citizen is called upon to express a judgment, the considerations that enter into consciousness are influenced by the valence of initial affect, whether that affect is intrinsic (e.g., prior attitudes) or extrinsic (e.g., smiley faces) to the process. *Affective contagion* is the underlying process that drives motivated reasoning and rationalization in political thinking.

We have shown strong downstream effects of early, automatic affective processing on political thoughts and evaluations, and these influences follow two tracks as specified in our theoretical Figure 1: one track, which we label motivated bias, runs through the spontaneous activation of prior attitudes about political objects; a second track, affective contagion, runs through the incidental feelings that may be cued by contextual factors. Both operate outside of awareness, and both have significant and sizable indirect effects on downstream processes in this article on the evaluations of political policies. Earlier work has demonstrated that unnoticed events may influence snap judgments and immediate attributions about a variety of objects (e.g., Todorov's competence attributions for political candidates), but this is the first experimental demonstration to our knowledge of the longer lasting effects of early, unconscious events on downstream information processing.

These findings bring us a step closer to understanding such real-world phenomena as place-of-voting and ballot-order effects, candidate appearance and trait attributions, the impact of symbols or emotive music in campaign advertising, the shadow of race or gender on political action, and motivated bias in counterarguing uncomfortable arguments or evidence. All of these are explained in our theory as the result of unnoticed influences of early political or contextual cues on the stream of political information processing.

The most noteworthy finding of this article is that unconscious priming events need not be semantically or conceptually related to the political object being evaluated to alter the course of political thinking. Affective cues, whether incidental or deliberately embedded in political messages or received in survey questionnaires, produce strong affective contagion. The most effective political symbols, slogans, and events, however, will be those that trigger *both* feelings and concepts in mutually reinforcing ways, and our theory of motivated political reasoning provides an explanation for why this is so (Figure 1). A politician announcing her candidacy with the Statue of Liberty as a backdrop will gain the advantage of positive feelings through direct-affect transfer and the indirect influence of affective contagion, as well as the reinforcing conceptual activation of "freedom," "liberty," "egalitarianism," and other semantic associates of Lady Liberty. Of course, we would anticipate that citizens from the opposing party would view the event as "transparently strategic" and experience the countervailing force of a negative prior-attitude effect and motivated bias in the construction of considerations. The theory of motivated political reasoning, key parts of which are tested in this article, predicts these phenomena as products of the unconscious affective and semantic processes that enable and sometimes bias political thinking about issues, policies, candidates, and events.

ACKNOWLEDGMENTS

Various portions of this paper were presented at the 2007 and 2008 American Political Science Association, 2008 Midwest Political Science Association, and 2008 International Society of Political Psychology annual meetings. We would like to thank our discussants at these conferences as well as participants in the bi-weekly Political Psychology seminar at Stony Brook University. We are particularly grateful to Bethany Albertson, Jason Barabas, Tereza Capelos, Elif Erisen, Stanley Feldman, John Hibbing, Cindy Kam, and Howie Lavine, in addition to the editor and three reviewers for their insights and suggestions. We would also like to thank Hasan Akbulut, Jesse Ellman, Anna Kou, Matt Reich, and Heetano Shamsoondar for their excellent research assistance. Correspondence concerning this article should be sent to Cengiz Erisen, TOBB University of Economics and Technology, Department of Political Science, Sogutozu Cad. No: 43, Ankara, 06560, Turkey. E-mail: cengiz.erisen@gmail.com

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