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The Illusion of Choice in Democratic Politics: The Unconscious Impact of Motivated Political Reasoning

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What are the fundamental causes of human behavior and to what degree is it intended, consciously controlled? We review the literature on automaticity in human behavior with an emphasis on our own theory of motivated political reasoning, John Q. Public, and the experimental evidence we have collected (Lodge & Taber, 2013). Our fundamental theoretical claim is that affective and cognitive reactions to external and internal events are triggered unconsciously, followed spontaneously by the spreading of activation through associative pathways that link thoughts to feelings to intentions to behavior, so that very early events, even those that are invisible to conscious awareness, set the direction for all subsequent processing. We find evidence in support of four hypotheses that are central to our theory: hot cognition, affect transfer, affect contagion, and motivated bias.

KEY WORDS: affect, cognition, political information processing, automaticity, control, implicit attitudes, motivated reasoning

Automaticity and Control in Political Behavior

The most interesting and important questions about human behavior concern cause, responsibility, and control. Is brutality a product of internal inclinations or external social forces (Milgram, 1974)?[1] Do prejudice and discrimination reside in personality or in society (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950; Allport, 1954)? When attributing cause and responsibility for the behaviors of others, do we overemphasize the internal and neglect the external (Jones & Harris, 1967)? To what causes do we attribute our own behavior, and are we right (Heider, 1958)? Was Adolf Eichmann a monster, or was he a cog in the social production of evil (Arendt, 1963; Darley, 1992)? How effectively can we resist the pull of stereotypes (Devine, 1989)? When is behavior *intended*, under conscious control, and when is it automatic (Bargh, 1999)? Who are the devils or angels who "make us do it?"

[1] A note on our title: "The Illusion of Choice in Democratic Politics" was suggested by Rick Lau for our book, *The Rationalizing Voter*.

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The same is true for research on motivated political reasoning. While confirmation and disconfirmation biases have been well documented in political behavior (Lodge & Taber, 2000; Nyhan & Reifler, 2010; Redlawsk, 2002; Taber, Cann, & Kucsova, 2009; Taber & Lodge, 2006), there has been less attention on the underlying processes of motivated reasoning. Our thesis in *The Rationalizing Voter* (Lodge & Taber, 2013) is that the devils and angels behind motivated reasoning in political behavior are often unnoticed forces and processes that occur in the early, unconscious phases of information processing. Conscious thinking, we argue, is the cart and not the horse, in which case our explicit reasoning processes serve to *rationalize* behavior rather than to cause it. Deliberation and choice may feel like control, but this feeling of volition is often an illusion.

In social, cognitive, and neuro psychology, we have seen a revolution in thinking about thinking, and this has begun to permeate the other social sciences. Writing in the 1998 *Handbook of Social Psychology*, Daniel Wegner and John Bargh claimed that "control and automaticity have developed into mature and important organizing ideas for the understanding of social behavior. The tricky questions of when and how people control their behavior, and the related but not identical questions of when and how behavior occurs automatically, have arrived in scientific social psychology with a bang" (p. 446). Nearly two decades later, we cannot say the same for political behavior research, where conscious direction, if not always strict rationality, holds sway as the primary mechanism for the conventional causal model.

So what are automaticity and control? It is tempting to define them as simple polar opposites, but this is misleading because control and automaticity coexist in many behavioral processes. Conscious control requires *awareness*, *intentionality*, *self-regulation*, and *cognitive effort*. The absence of any of these attributes, which John Bargh (1994) calls the "Four Horsemen," introduces degrees of automaticity.

Early analyses of automaticity focused on spontaneously activated behaviors, as when a symbol (e.g., a swastika) triggers particular thoughts and feelings outside of awareness, leading to particular actions, and the direct priming of behavioral inclinations remains an important part of this literature. But it is now understood that goals also can be activated without awareness to regulate subsequent thoughts and behaviors (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001). Learned habits or script-based behaviors (e.g., how one buys a train ticket or completes a ballot) are prime examples of goal dependent automaticity. For example, a (chronic or contextually primed) goal to behave competitively leads to less cooperative behavior in allocating resources. Such findings of goal-dependent automatic behavior are now common in the experimental literature (Custers & Aarts, 2010). Motivated political reasoning (Taber & Lodge, 2006), in which prior attitudes or beliefs bias the processing of new information about political candidates, groups, or issues, is an important form of goal-dependent behavior that will often occur outside of awareness. Discriminatory behavior may similarly be triggered by automatic goals that serve social hierarchy (Sidanius & Pratto, 2012).

Stereotype activation also raises questions of automaticity and control. Patricia Devine, for example, demonstrated that potentially derogatory stereotypes of African Americans are triggered spontaneously in most if not all White respondents, but those with a motivation to control prejudice are able to do so if they are aware of the stereotype activation and they have time and cognitive resources to override their automatic inclinations (Devine, 1989). It remains an open question, however, how often and under what conditions such requirements of awareness, time, resources, and motivation line up to enable conscious management of behavior in the wild (Bargh, 1999). Our theory, as outlined below, casts doubt on the prevalence of controlled political behavior and emphasizes the ubiquity of automatic influences and unconscious processes.

While we don't want to become side-tracked in philosophical debate about nonempirical questions, it is important to note that the findings of automaticity also raise important questions about the nature of free will and individual responsibility for behavior. What does free will mean when behavior is caused preconsciously, and explicit thinking explains, excuses, or even denies the actual causal

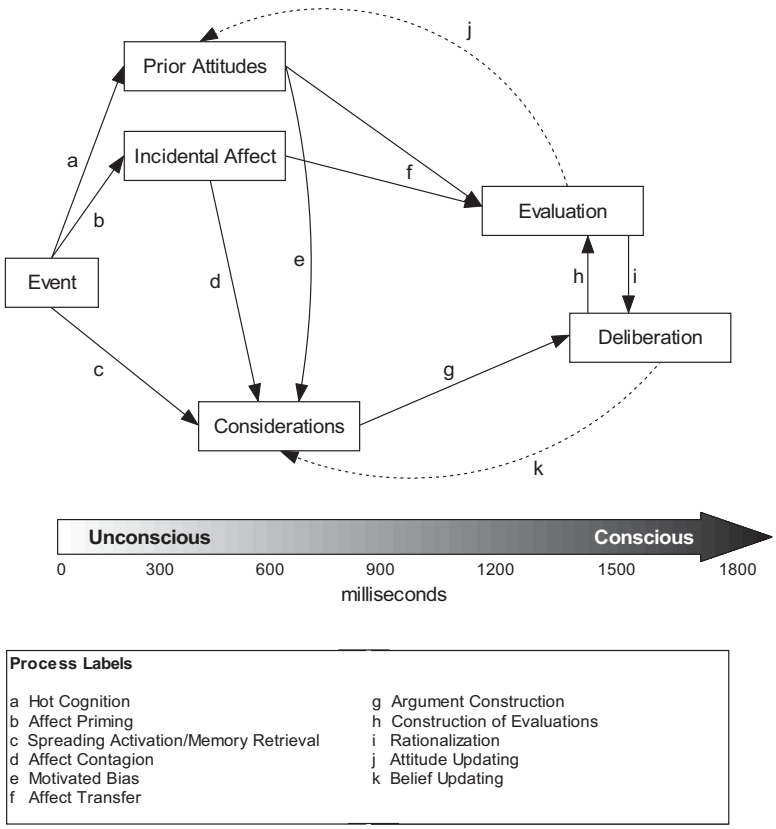

Figure 1. The John Q. Public model of political information processing.

forces at work? Legal and moral responsibility similarly come into question when the devils or angels that "make us do it" are not under conscious control.

It seems likely that our most important control processes are themselves automatic. Egalitarian values may be triggered outside of awareness to control stereotype-driven inclinations toward discriminatory behavior. Perhaps cooperative responses can be learned (conditioned?) to automatically override zero-sum or retaliatory behavior even in the presence of competitive cues. Findings to support such suppositions could put a positive spin on automaticity, the cognitive monster in chains as it were, but we know very little about how and when this might occur, and the rise of automaticity as an organizing theme in cognitive psychology remains a largely pessimistic story of human failure.

We are interested in understanding the fundamental causes of human political behavior, and the degree to which these causes are internal or external and relatedly whether they are implicit or explicit, automatic or controlled. Following sections will describe our theory of nonconscious thinking, the relevant evidence we and others have collected, and some of the key implications of our findings.

The *John Q. Public* Model of Political Information Processing

John Q, Public (*JQP*) is an affect-driven, dual-process model of information processing (Lodge & Taber, 2013). It is dual process in that *JQP* distinguishes between two modes of information

processing, automatic and controlled, though these modes interact in producing thinking and behavior, and it is affect-driven in that positive and/or negative feelings are integral to the processing of information, providing motivation and direction to thought.

The fundamental assumption driving our model is that affective and cognitive reactions to external and internal events are triggered unconsciously, followed spontaneously by the spreading of activation through associative pathways that link thoughts to feelings to intentions to behavior, so that very early events, even those that are invisible to conscious awareness, set the direction for all subsequent processing. It is only at the tail-end of this stream of processing that we become consciously aware of the associated thoughts and feelings generated moments earlier and we experience what subjectively seems to be consciously initiated thinking, reasoning, and the intention to act (Custers & Aarts 2010; Libet 1985).

Figure 1 shows the *JQP* model of information processing from the exposure to an event through the formulation of evaluations and deliberations one to two seconds later. The stream of processing passes through affective and then cognitive mediators to the construction of evaluations of political objects and conscious deliberation. Subjective awareness increases from left to right as a function of time, attention, and other factors. Each arrow represents a link in the causal cascade that ultimately connects the stimulus with a related evaluation and perhaps conscious thinking.

Feelings, we claim, arise automatically within milliseconds of exposure to a familiar sociopolitical object or event. The *hot cognition hypothesis* describes the primacy of affect in early processing of a stimulus (arrow a in Figure 1). Valence affect arises first in the stream of processing, is unintentional, and difficult to control, so that the decision stream becomes viscerally "hot" almost immediately (as shown, for example, by Damasio, 1994).

In addition to the intrinsic affect that provides attitudinal direction for thinking through hot cognition, *affect priming* of incidental affect (arrow b) will influence thoughts and evaluations. For example, sad or happy music, a sunny day, or affectively charged symbols spontaneously influence how we feel about political objects. Both attitudes and incidental feelings can cause evaluations directly through *affect transfer* (arrows f) or indirectly through a biased sampling of considerations we call *affect contagion* and *motivated bias* (arrows d and e).

The conventional model of political reasoning also fits into this process (path c-g-h), but this pathway is never independent of implicit affective processes. The construction of arguments (arrow g) and subsequent evaluations (arrow h) are shaped by hot cognition, spreading activation, and affect contagion. Figure 1 also shows two updating processes through which affect and considerations are stored back to long-term memory for future use (dotted arrows j and k, which do not actually work backwards in time, but rather point to future considerations and attitudes).

Central to our discussion about the illusion of choice in democratic politics is the relative importance of the deliberative *construction of evaluations* (arrow h) and the *rationalization* (arrow i) of affectively triggered evaluations which in turn shape deliberations. Citizens might consciously construct evaluations based on their explicit considerations in accordance with the conventional c-g-h model (e.g., Zaller, 1992; Zaller & Feldman, 1992). We argue that such cold evaluations appear to be very rare due to the ubiquity of hot cognition, affect contagion, and affect transfer. Far more common, we believe, is the reverse causal pathway from evaluation to deliberation, which posits that the evaluations are (either directly or indirectly) shaped by processes outside of conscious control such as automatic affect. Deliberation often serves to rationalize our attitudes, intentions, and behaviors, which are essentially determined by uncontrolled processes.

Given sufficient time and motivation, people may think self-consciously and reflectively about the object of evaluation and their own reactions. For example, Lavine, Johnston, and Steenbergen (2012) argue that ambivalence can trigger more reflective deliberation among partisans. However, while such conscious deliberation will trigger new rounds of unconscious processing, it cannot go back and alter earlier processes and responses. Although some studies indicate that it is indeed

possible to override implicit responses (Devine 1989; Greenwald & Banaji 1995; Moskowitz, 1999; Monteith et al. 2009), especially when the context is ambiguous or the target affectively ambivalent (Lavine et al., 2012), whether it can tame the "cognitive monster" of unconscious processing remains an important open question (Bargh 1999; for discussion of the potential to override implicit responses, see the special issue of *Critical Review* on political dogmatism, including Coronel & Kuklinski, 2012; Druckman, 2012; Friedman, 2012; Kruglanski & Boyatzi, 2012; Ross, 2012; Taber & Lodge, 2012).

Evidence for *John Q. Public*

This section will review empirical tests we have conducted of three hypotheses that are central to our theory: hot cognition, affect transfer, and affect contagion. Motivated bias, another key hypothesis, is now well established in political behavior and so the empirical evidence is not reviewed here (Lodge & Taber, 2000; Nyhan & Reifler, 2010; Redlawsk, 2002; Taber & Lodge, 2006; Taber et al., 2009).

Hot Cognition

A central component of our dual-process model of the rationalization of political beliefs and behavior is the hypothesis that all known social concepts are affectively charged, positively and/or negatively, and this affective charge is linked directly to the concept in long-term memory, ready and available to come automatically and inescapably to mind within milliseconds of exposure to the object. We conducted a series of experiments, which together show that a wide range of political concepts are affectively "hot," and these spontaneous feelings are available to inform snap judgments of the associated political objects.

To turn the hot cognition postulate from conjecture to a testable hypothesis, we use an experimental procedure known as the *sequential attitude priming paradigm* (Bargh, Chaiken, Govender, & Pratto, 1992; Burdein, Lodge, & Taber, 2006; Fazio, Sanbonmatsu, Powell, & Kardes, 1986). This procedure was designed to test whether positive or negative affect is directly linked to a concept in memory and whether these feelings can be spontaneously activated on mere exposure to the concept.

The attitude priming procedure exposes subjects to a prime word followed by a target word. Participants are instructed to press one button labeled "positive" or another labeled "negative" to indicate "as fast as possible without making too many errors" whether the target word, chosen for its *un*ambiguous positive or negative meaning (for example, "delightful" or "cancer"), has a positive or negative connotation. The critical variable of interest is the latency time from onset of target word to positive or negative button response (Figure 2). To ensure precise timing, it is necessary to overwrite the contents of visual sensory buffers using a forward and backward mask (a visual image or jumbled letter string that carries no semantic or affective information).

> The logic of the design was that to the extent that presentation of the attitude object name activated the evaluation associated with the attitude object, this evaluation (good or bad) would then influence how quickly subjects could correctly classify the target adjective as positive or negative in meaning. If the adjective was of the same valence as the attitude object prime, responses should have been faster (i.e., facilitated) relative to a baseline response…. Conversely, if the adjective and prime were of opposite valence, responses should be slower. (Bargh et al. 1992, p. 894)

The hot cognition hypothesis predicts facilitation, a relatively fast RT, when prime and target are *affectively congruent*, though they are not semantically related, and inhibition, a slower RT, for

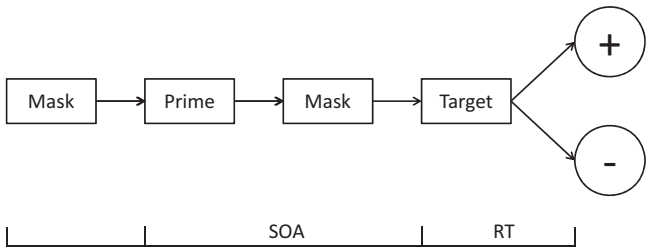

Figure 2. Sequential priming procedure.

prime-target pairs that are *affectively incongruent*. This is *a nonreactive task* in that we never explicitly ask people how they feel about the political object prime, which is actually what interests us. Rather, they simply indicate whether a target word, chosen to be affectively univalent and unrelated to politics, carries a positive or negative feeling.

To test the hot cognition hypothesis, it is not enough to show that political objects have associated affect. We must also show that this affect occurs *automatically*, and so we must precisely manipulate the time from the onset of the prime to the onset of the target, called the stimulus onset asynchrony (SOA). Our hypothesis that hot cognitions arise *automatically* predicts that affective facilitation and inhibition effects will show up only in the short SOA condition when the prime is presented too quickly for conscious expectations to influence evaluations.

The experimental literature on automaticity of feelings focuses largely on how people form and update their impressions of other people (Amodio & Mendoza, 2010), finding in many classic studies that perceivers spontaneously attribute traits, beliefs, attitudes, and motives to others (Uleman, Newman, & Moskowitz, 1996). In the political context, citizens who have thought about political figures associate feelings with them at the time of processing (an online evaluation), and mere exposure to their name or image will automatically trigger these feelings.

But do online processing and hot cognition extend beyond evaluations of individual people to groups or ideas. Perhaps the recognition and evaluation of other people (faces, posture) is hard-wired in dedicated brain structures, but these automatic processes are not available for more complex objects of thought. Or perhaps perceived within-group variance makes processing of groups as entities more difficult, requiring more conscious thought (Hamilton & Sherman, 1996). And issues are even more variable and complex. Zaller and Feldman (1992), for example, argue that citizens are apt to see two or more sides to issues, and their ambivalence over the many pros and cons may prevent them from forming automatic evaluations (for a nuanced discussion, see Lavine et al., 2012).

We carried out a series of priming experiments following variations on the same basic experimental design to test the automatic hot cognition hypothesis for a range of political leaders, groups, and issues, as well as potential moderators.

Procedure for hot cognition experiments. Undergraduate students in introductory political science courses at Stony Brook University received extra credit for their participation: Study 1, $N = 80$; Study 2, $N = 162$; Study 3, $N = 95$. All studies were conducted in the Laboratory for Experimental Research in Political Behavior, with study participants carrying out the tasks individually on personal computers in separate experimental rooms.

Participants used a button response on a computer keyboard to indicate "as quickly as possible without making too many errors" whether the connotation of a target word was "positive/good" or "negative/bad." In all experimental trials, a prime word (for example, BUSH) appeared in upper case and remained in the center of the screen for 200 ms, followed by a target word (for example, "sunshine") which appeared center-screen in lower case and remained on screen until the participant's button response categorizing the target word as "Good" or "Bad." The key dependent variable was

Table 1. Primes and Targets for Hot Cognition Experiments

Study 1				
Person Primes	Group Primes	Issue Primes	Positive Targets	Negative Targets
Clinton	Democrat	Anti Abortion	appealing	awful
Gore	Politician	Death Penalty	beautiful	horrible
Guiliani	Republican	Peace	delightful	miserable
Hitler		Taxes	magnificent	painful
Lincoln			marvelous	repulsive
Pataki				

Study 2				
Person Primes	Group Primes	Issue Primes	Positive Targets	Negative Targets
Bush	Democrats	Guns	comedy	Cancer
Gore	Politician	Peace	rainbow	funeral
Hillary	Republicans	Taxes	miracle	mutilate
Hitler			love	toothache
Lincoln			joy	death
Rudy			laughter	rape

Study 3				
Person Primes	Group Primes	Issue Primes	Positive Targets	Negative Targets
Colin Powell	African Americans	Affirmative Action	gift	death
George W. Bush	Americans	Counter-Terrorism	hug	demon
Giuliani	Arabs	Death Penalty	joy	grief
Hillary	Democrats	Free Speech	laughter	pain
Hitler	Jews	Gun Control	rainbow	rabies
Kennedy	NAACP	Pro-Choice		
Lincoln	NRA	Pro-Life		
Mark Green	Politicians	Taxes		
Mike Bloomberg	Republicans	Welfare		
Osama bin Laden	Terrorists			
Pataki				

the time this judgment took in milliseconds. In the short SOA condition, a 100-ms blank-screen interval appeared between the prime and target (total of 300 ms from prime onset to target onset), while in the long SOA condition, there was an 800-ms blank-screen interval (total of 1000 ms between prime and target onsets). Trials were separated by a two-second pause.

Following this attitude-priming task, an explicit survey was administered to collect: (1) each participant's good-bad ratings of the target words; (2) their Likert ratings of the positivity of the prime words and separately their negativity ratings of the prime words, which allows us to measure both the valence and level of ambivalence of the primes; (3) Likert ratings of their strength of attitude toward the political leaders, groups, and issues; (4) basic demographics; and (5) general political knowledge questions and questions about the current or most recent office held by each of the political figures among the primes. Table 1 lists the primes and targets used in each of the three studies.

For primes, we chose a broad range of political objects (persons, groups, and issues), providing variance in likes, dislikes, strength of attitude, and ambivalence. Target words, half positive and half negative, were selected to be clearly univalent from a list of concepts compiled and nationally normed by Bradley and Lang (1999).

Variables. Prime valence was measured as the difference between the positive and negative evaluations of the object for each participant on the explicit survey, dichotomized so that any difference

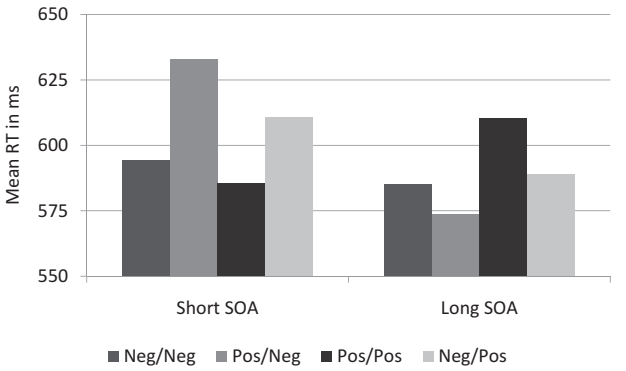

Figure 3. Average reaction times for congruent and incongruent trials, Study 1.

greater than zero is coded positive, any difference less than zero is coded negative, and any difference equal to zero is set to missing. Prime strength was dichotomized around the scale midpoint to differentiate weak from strong evaluations. Prime ambivalence was computed using the Griffin formula (Lavine et al., 2012; Thompson, Zanna, & Griffin, 1995) and then split at the scale midpoint. Sophistication was measured as the number of correct responses on a 17-item political-knowledge test, with a median split defining unsophisticates and sophisticates.

Reaction-time data are generally positively skewed because of the hard lower limits on response times, so the raw reaction-time data was subjected to a natural log transformation (the overall pattern of results emerges with or without this transformation). In addition, we eliminated trials involving clear errors in ratings of targets (.05% of trials across the three studies).

Hypotheses and design. Studies 1 and 2 were mixed-model designs with repeated measures on prime and target valence: we manipulated the interval between prime and target (long vs. short SOA), the valence of the political prime word (positive vs. negative), and the valence of the nonpolitical target word. In Study 3, SOA was manipulated within subjects so that the same subjects received long and short intervals on different trials.

Hot cognition (arrow a in Figure 1) predicts that objects of thought (e.g., politicians, political groups, ideas) will be affectively charged, such that mere exposure to a triggering event will automatically activate prior attitudes. In the context of these studies, we predict that response times will be faster for affectively congruent prime-target concepts (pos/pos and neg/neg) than for incongruent pairs (neg/pos and pos/neg). Automaticity expects these facilitation and inhibition effects to show up *only* in the short SOA condition and not when a long SOA allows conscious expectancies to impede the spontaneous activation of hot cognitions. Operationally, this hypothesis is represented by the three-way interaction, SOA $\times$ prime valence $\times$ target valence. To explore moderating factors, we will break these results down by sophistication (a between participant correlate) and attitude strength (within participant). We predict that political sophisticates and those with strong attitudes will be most likely to have formed hot cognitions for the political leaders, groups, and issues.

We will also test the hot cognition hypothesis for the three types of primes (persons, groups, issues), as well as the underlying contention that hot cognition should be weaker for ambivalent primes.

Results. Results are displayed in sets of four bars, representing the mean raw RT for comparison groups of prime-by-target trials. Affectively congruent trials are shown in columns 1 and 3 (negative primes/negative targets, positive primes/positive targets), with incongruent pairings in columns 2 and 4 (positive primes/negative targets, and negative primes/positive targets). The most informative comparisons are between the first and second bars for negative targets and the third and fourth bars for

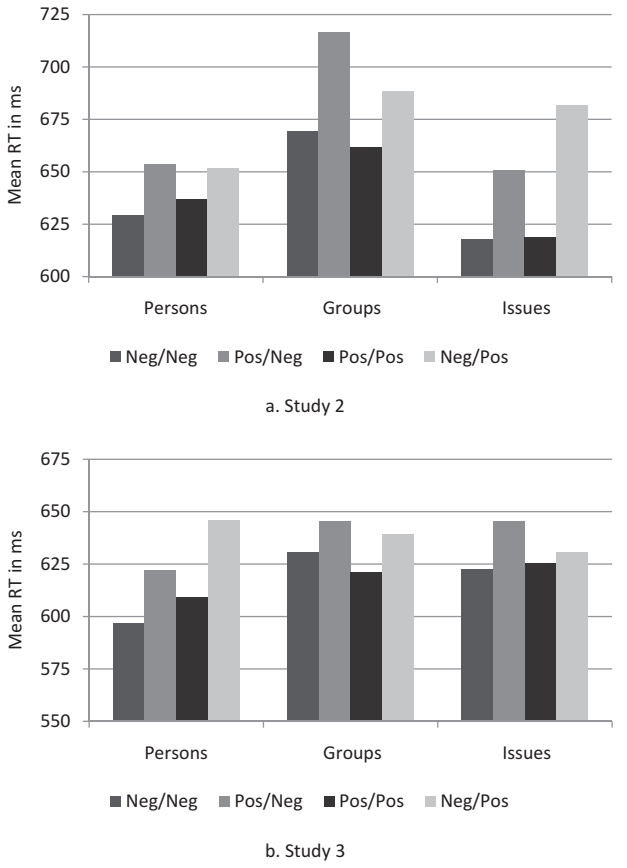

Figure 4. Hot cognition for persons, groups, and issues.

positive targets, with the prediction that congruent trials should be faster. Figure 3 illustrates these basic comparisons using Study 1, and the same pattern is observed for studies 2 and 3.

The hypothesized three-way interaction of SOA, prime, and target is highly significant in Study 1, $F(1, 78) = 14.29$, $p < .001$, with no significant main effects. Follow-up contrasts confirm that under short SOA, responses to negative targets are significantly faster when preceded by negative primes, $t(45) = 2.02$, $p = .025$ (one-tailed), while positive targets elicit faster response times when paired with positive primes, $t(44) = 2.26$, $p = .02$. Similar contrasts at long SOA are not significant, confirming the automatic nature of the process. These findings replicate in Studies 2 and 3 (Lodge & Taber, 2005, 2013), showing clear evidence of an automatically accessible association in memory between positive and negative affect and political leaders, groups, and issues.

But we still need to determine whether hot cognition holds for all prime types or is limited to person primes. Are groups and issues less prone than persons to promote automatic evaluative feelings as some have argued, or will *any* political object that has been evaluated be tagged to feelings with automatic retrieval on mere exposure? Figure 4 shows the raw reaction times for the interaction of interest in Studies 2 and 3, broken down by prime type. As predicted in *JQP*, positive or negative feelings appear to be automatically activated for all prime types, *without conscious mediation*.

Finally, we find strong support for our expectations about sophistication, attitude strength, and ambivalence across these studies. The critical hot cognition interaction—SOA by prime valence by target valence—is clearly moderated by these factors, such that greater political sophistication,

stronger attitudes, and less ambivalence all strengthen the automatic associations of positive and negative feelings with known political objects (see Lodge & Taber, 2005, 2013).

Discussion of hot cognition. Research in psychology shows strong evidence for the automaticity of nonpolitical attitudes (Bargh et al., 1992; Fazio, 1992; Greenwald & Banaji, 1995), and we also find consistent and robust evidence of the spontaneous evaluation of political leaders, groups, and issues, especially for strong univalent attitudes and for political sophisticates. These effects are not consciously controlled, and they hold for *semantically unrelated* primes and targets. Most important, these results offer strong support for the prevalence of hot cognition in political information processing which cannot be explained by purely cognitive models, and they set the stage for subsequent affective processing in *JQP*. Hot cognition is the first step in a cascade of effects, outside the conscious control of citizens, that we claim drive motivated reasoning and the rationalizing voter.

Affect Transfer

The previous section documented uncontrolled and momentary effects of positive and negative feelings on the expression of snap judgments for a variety of political objects, including candidates, parties and groups, ideas and issues. We now turn to the immediate "downstream" effects of hot cognition on political information processing. Early influences, even small and substantively irrelevant ones, propagate through a cascade of subsequent information processing, providing motivation and direction, and altering the accessibility of considerations in memory for conscious downstream thinking.

This section will review our evidence for *affect transfer* from implicit feelings to explicitly reported evaluations of political candidates (arrows f in Figure 1). In order to judge the importance of this unconscious cascade, we will assess the relative influence of unrelated and unconscious affective cues versus clearly relevant and explicitly presented information about the candidates. In two studies, we experimentally manipulate the overt similarity between a participant and a fictional politician by matching the participant's responses from a preexperimental questionnaire to the positions the candidate takes in a news article. Similarity is known to be a strong predictor of candidate preference and voting behavior, and we fully expect greater similarity to lead to more positive candidate evaluations and dissimilarity to more negative evaluations (path c-g-h in Figure 1). These similarity effects should be strong, and one might expect they would wipe out the influence of positive and negative affective primes presented outside of awareness. This, however, is not what we find.

The expectation informing many contemporary models of candidate evaluation and vote choice in political science is that citizens match their most important issue preferences to the policy stands of the candidates and vote for the most proximate candidate (Berelson, Lazarsfeld, & McPhee, 1954; Black, 1948; Byrne, London, & Reeves, 1968; Downs, 1957; Granberg & Holmberg, 1986; Lau & Redlawsk, 1997). In this overtly deliberative view, the more deeply one thinks about one's own and the candidates' positions, the better (the more "rational"?) the decision. Deliberation, it is assumed, increases one's chances to bring additional considerations to mind and focus on the important substance of issue politics. Surely, the more carefully people think about the candidates and their issue stands, the less influenced they will be by "extraneous" factors, such as the physical attractiveness of the candidate, or ballot position, or voting location, or the weather!

It seems hard to argue with this steely logic, but contemporary research in psychology finds that first impressions may be superior to deep and careful thought (Dijksterhuis, 2004; Dijksterhuis, Bos, Nordgren, & Baaren, 2006; Forgas, 1995; Hofmann & Wilson, 2010; Wilson & Schooler, 1991). Similarly, we and others find that individuals motivated to be accurate—which encourages a deeper memory search—are often more biased by prior attitudes than those relying on first impressions (Kunda, 1990; Taber & Lodge, 2006). And there is solid evidence that one's seat-of-the-pants impression better predicts long-term satisfaction with one's choice (Acker, 2008; Gigerenzer, 2007; Wilson & Schooler, 1991).

In our theory, the very act of deliberation influences the accessibility of considerations in memory, with necessary impact on the evaluations respondents report. The deeper the thought given an evaluation the greater the effect of affective congruence on the sampling of considerations from long-term memory and consequently the stronger the bias in evaluation. Given the postulates underlying *JQP*, two separate effects are predicted: (1) Asking those who initially like a candidate to stop and think will lead them to like the candidate even more: the reverse would be true for negative priming. And (2) if the individual is simultaneously primed when searching memory, the number of congruent considerations should also be increased.

Procedure for affect transfer experiments. Our experiments on affect transfer present to participants explicit candidate information with which they can make an overt similarity judgment *and* affective primes presented out of awareness. As in the hot cognition studies, we use affective word primes selected from Bradley and Lang's (1999) *Affective Norms for English Words* (ANEW). The question at hand: will positive primes (for example, "love," "joy," "kiss") and negative primes ("sad," "grief," and "rabies") presented too rapidly to be consciously processed transfer to the evaluations of candidates that are consciously forming as participants read standard campaign information in a news-story format.

Undergraduate students in introductory political science courses at Stony Brook University received extra credit for their participation: Study 1, $N = 165$; Study 2, $N = 196$. Because English words were used as primes, nonnative speakers of English were excluded: 56 in Study 1 and 31 in Study 2. All studies were conducted in the Laboratory for Experimental Research in Political Behavior, with study participants carrying out the tasks individually on personal computers in separate experimental rooms.

Participants completed a political attitudes questionnaire to identify their positions on several key issues. For Study 1, the issues used to manipulate similarity were *affirmative action*, measured by the "racial resentment scale" with one additional direct affirmative action item taken from Kinder and Sanders (1996), and attitudes towards *the Iraq War*, measured by the "attitudes toward war scale" (Stagner, 1942), with an additional item focused specifically on the war in Iraq. Participants then read a fictional newspaper article about a hypothetical candidate, William Lucas, who was running to fill an empty Congressional seat. A picture of Candidate Lucas remained on the screen while participants read the article.

The news article appeared in three sections so we could cleanly manipulate our two factors. The first section of the article was presented one sentence at a time, using 20 nonissue statements about the candidate, campaign, or district. For example, "The Eastern portion of this electoral district is sparsely populated, while the western portion includes several suburbs of San Diego." During this first section, each of the 20 nonissue statements was primed with an affectively univalent word. Participants in the positive prime condition were exposed to 20 consistently positive words; those in the negative prime condition were exposed to 20 consistently negative words; those in the control received no word primes. As with the subliminal priming paradigms described above, the priming procedure began with a forward mask of random letters presented for 13 ms, followed by a prime word presented for 39 ms, followed by a backward mask of random letters presented for 13 ms, followed by one of the 20 innocuous sentences. Each prime word was randomly paired once with each of the 20 sentences in the first section of the article. A 39-ms blank screen was presented between the masks in the control condition. To cleanly separate the priming and similarity manipulations, participants were never primed while reading the candidate's substantive issue positions.

The second section of the news article presented a paragraph describing the candidate's policy positions on the Iraq War and Affirmative Action, each manipulated to be either similar or dissimilar to the participants' positions. Candidate Lucas took either the same or the opposite positions on these issues as were taken by the given participant in the preexperiment questionnaire. Subjects were assigned to either the similar condition, in which case Lucas took their positions on both issues, the

dissimilar condition, in which case Lucas took the opposite position on both issues, or a control candidate condition, in which case Lucas did not take a clear position on either the Iraq or Affirmative Action issues.

The final section of the news story reported on fundraising and advertising expenses, which affected neither similarity nor priming.

Study 2 followed a similar procedure but introduced two significant changes. First, we manipulated depth of information processing such that one-third of the participants were asked to stop and think about the candidate's issue positions, one-third were instructed to proceed at their own pace, and one-third were given a distracter task while reading the candidate's issue positions.

Second, participants in Study 2 were asked to evaluate two competing candidates rather than a single candidate in a congressional race. After five neutral statements with no priming, the news story presented 15 nonissue statements about candidate A and 15 nonissue statements about candidate B, and these 30 statements were primed with affective words. One condition presented a block of nonissue statements about candidate A paired with positive primes and a block of statements about B paired with negative primes; a second condition reversed the valence of the pairings; a third condition interspersed the statements and primes so that the valence remained consistent for each candidate, but the primes and statements were not presented in a block. Order was randomized. Primes were masked, and presentation timing was identical to Study 1. In short, every participant received 15 positive primes for one candidate *and* 15 negative primes for the other, all outside of conscious awareness. While the consistent presentation of negative or positive primes in Study 1 could lead to mood shifts, the balanced presentation of positive and negative primes in Study 2 should neutralize mood.

Two dependent variables were collected upon completion of the article: we asked whether participants would likely vote for the candidate, and we asked participants to rate how much they liked the candidate, both assessed on 6-point Likert scales. Finally, we collected demographic information and administered a 10-item political-knowledge scale.

Hypotheses. In these studies, we are interested in the direct transfer of incidental affect to evaluations of political candidates (lower arrow f in Figure 1) and the relative impact of transferred feelings as compared to traditional similarity evaluation (path c-g-h). That is, we predict that the unnoticed affective primes, presented while participants are learning about novel candidates, will directly transfer to feelings about the candidates, even when explicit candidate issue positions are available and subjects are instructed to think carefully about the candidates.

Who should we expect to be affected by the primes? The associative network model of memory at the heart of *JQP* predicts that political sophisticates should differ from unsophisticates in having more politics-related nodes in LTM, stronger affectively charged links, and a more structured memory. Add to this the hot cognition hypothesis that information processing charges concepts with affect, and it follows that political sophisticates should be *more not less* affected by the priming of positive and negative feelings. By contrast, conventional views of candidate evaluation assume that the least politically knowledgeable will be most susceptible to emotion and irrelevant feelings (but see Huber & Lapinski, 2006; Huddy & Gunnthorsdottir, 2000).

In another departure from conventional wisdom, we predict that thinking deeply about a candidate and his issue positions will increase the influence of affective primes because more thought will bring more associations to mind, increasing the number of affectively charged considerations that enter the processing stream and the opportunities for the transfer of affect to candidate evaluations.

We have four experimental hypotheses: *the similarity hypothesis* predicts that respondents will evaluate candidates with similar issue positions to their own more positively than candidates with dissimilar issue positions; *the affect transfer hypothesis* predicts that exposure to affective primes will push candidate evaluations in the affective direction of the primes; *the sophistication hypothesis* predicts that sophisticates' candidate evaluations will be more influenced by both similarity and affective primes than nonsophisticates; and *the deliberation hypothesis* predicts that participants who think

more carefully about a candidate will be more influenced by the affective primes in their candidate evaluations than those who think less carefully or are distracted.

Results. The data for candidate evaluations in Study 1, measured as the mean of the vote likelihood and liking scale for each candidate, were initially analyzed using an omnibus 3 (subliminal prime: positive, none, or negative) × 3 (candidate similarity: similar, ambiguous, or dissimilar) × 2 (sophistication: high vs. low) ANOVA. This analysis revealed significant main effects for explicit candidate similarity, $F(2, 91) = 9.88$, $p < .05$, and implicit prime valence, $F(2, 91) = 3.62$, $p < .05$, qualified by a significant three-way interaction among prime valence, candidate similarity, and political sophistication, $F(4, 91) = 2.79$, $p < .05$. No other significant effects were observed in Study 1. In follow up, linear trend analyses found clear support for both the prime and similarity hypotheses. The three-way ANOVA revealed a significant main effect for candidate similarity $F(1, 101) = 25.44$, $p < .05$, and a significant main effect of the subliminal prime, $F(1, 101) = 7.54$, $p < .05$, again qualified by a significant three-way interaction between candidate similarity, the subliminal prime, and political sophistication, $F(1, 100) = 9.12$, $p < .05$, with no other effects reaching significance. When we further examine this three-way interaction, we find that both sophisticates and unsophisticates are influenced by candidate similarity, $F_{\text{high soph}}(1, 51) = 11.71$, $p < .01$, $F_{\text{low soph}}(1, 50) = 13.79$, $p < .001$. However, as predicted, only high sophisticates are influenced by the subliminal primes, $F_{\text{high soph}}(1, 51) = 9.59$, $p < .01$, $F_{\text{low soph}}(1, 50) = 0.50$, $p > .10$.

Study 2 replicated the familiar pattern observed in Study 1: for politically sophisticated participants, the subliminal primes exert effects in the expected direction for each level of cognitive deliberation. However, this effect is only statistically significant for the sophisticated participants in the deliberation condition: for Candidate A, $F(1, 46) = 4.30$, $p < .05$, and for Candidate B, $F(1, 46) = 5.86$, $p < .05$. The effects in the natural-pace and distracted conditions were not significant. As predicted, but contrary to common wisdom, only when the participants are asked to think carefully about the candidates do the unnoticed primes significantly influence their evaluations. None of the priming effects were significantly moderated by candidate similarity.

Again, as hypothesized, there was also a highly significant main effect of candidate similarity for sophisticates, $F(1, 111) = 20.59$, $p < .05$. This effect was especially pronounced in the cognitive deliberation condition: for Candidate A, $F(1, 46) = 12.24$, $p < .05$, and for Candidate B, $F(1, 46) = 5.43$, $p < .05$. As predicted in conventional proximity models of candidate evaluations and voting and consistent with our theory, the more that sophisticated participants thought about the candidate, the stronger their evaluations corresponded with their issue preferences. Finally, the interaction between the subliminal prime and candidate similarity was not significant in any of the models.

As for the low sophisticates in Study 2, no significant results emerge for either candidate similarity or affect transfer. It appears that in the more complex two-candidate scenario, less politically sophisticated participants find it difficult to form evaluations of multiple candidates on the basis of similarity or affect transfer. These results support our theoretical expectation that the unnoticed effects of affect transfer depend on sufficient associations in memory to allow affect to transfer along multiple paths to target objects (i.e., sophisticates with dense knowledge networks). Even more important, these implicit effects are increased rather than attenuated by careful explicit thought about similarity.

Discussion. These two experiments demonstrate that information presented outside of conscious awareness influences the way people evaluate political candidates. It is a staple of the existing candidate-evaluation literature that people favor candidates who share their political attitudes. In these experiments, we explicitly incorporated the participant's prior attitudes toward the candidates (via the similarity manipulation) and crafted candidates that participants would either like or dislike. Importantly, issue proximity proves to be a strong predictor of how people form their evaluations of political candidates, as most prior research has suggested. True enough, but the current studies demonstrate that more goes into candidate evaluations than issue proximity: people are also influenced by the

information that they are exposed to outside their conscious awareness, and this information systematically impacts their candidate evaluations.

What we see as an important addition to this literature on candidate evaluation is the finding across both studies that the politically sophisticated are more strongly influenced by incidental information than are the less politically knowledgeable. And, contrary to conventional wisdom and volumes of philosophical advice, the more sophisticates thought about the candidates, the more these unnoticed priming events influenced their evaluations of the candidates. This finding is predicted by *JQP* and consistent with previous findings (Lodge & Taber, 2005; Taber & Lodge, 2006). Normatively, it is the most knowledgeable among us who should be best able to resist incidental influences, but empirically, these are the very citizens—people like ourselves, no doubt—who are most affected.

Affect Contagion

We have found strong experimental support for the automatic processing of affective information in the development and updating of political evaluations. But we have not presented direct evidence to support the extended cascade of influences from early unconscious affect through deliberation and behavior, which is triggered by the biased memory retrieval we call "affect contagion." Moreover, citizens may not evaluate public policy issues in the same way they think about and evaluate political persons (Zaller, 1992). Citizens may see two or more sides when thinking about political issues, and their awareness of these pros and cons may prevent them from forming a univalent evaluation that might bias subsequent thinking (Lavine et al., 2012). And we have presented evidence that ambivalence toward political objects attenuates hot cognition, perhaps promoting a more memory-based sampling of the considerations that are accessible in memory when citizens are overtly called upon to construct and report an evaluation (Tourangeau, Rips, & Rasinski, 2000; Zaller & Feldman, 1992).

Even in this memory-based construction of evaluations, however, we claim that the feelings aroused in the initial stages of processing sociopolitical concepts—candidates, groups, issues—inevitably color *all* phases of the evaluation process. The sample of considerations that enters working memory will be biased by the valence of initial affect, especially for sophisticates who are thinking hard. In *JQP*, considered thought is the joint product of memory-based processing and initial feelings, which will likely come *both* from prior attitudes toward the political objects of thought and incidental feelings aroused by contextual effects. The opinions citizens voice when talking with friends (or responding to NES open-ended questions asking for reasons why they like or oppose a policy proposal) necessarily reflect the information currently accessible in memory, and this accessibility is biased by *affect contagion*—the facilitation of considerations from memory that are affectively congruent with initial feelings and the inhibition of incongruent thoughts.

In short, the thoughts that come consciously to mind for citizens will be biased systematically by the feelings aroused in the first unconscious 300–500 ms of processing, which may come from the arousal of *intrinsic affect* (affect or attitudes directly associated with the objects of thought) or from *incidental affect* (feelings aroused by substantively unrelated environmental stimuli or prior mood). Whatever their source, positive feelings facilitate the activation of positive and inhibit negative thoughts, while negative feelings have the opposite activation pattern. In *JQP*, this underlying affective bias in processing drives motivated reasoning and rationalization in political thinking (Kim, Taber, & Lodge, 2010; Lodge & Taber, 2013; Taber & Lodge, 2006).

The studies reported in this section put our *affect contagion* hypothesis to direct test (Erisen, Lodge, & Taber, 2014; Lodge & Taber, 2013). We expect the balance of positive and negative thoughts that are retrieved and constructed into deliberations and arguments to be shaped by feelings, even when the objects or primes that trigger those feelings are completely incidental to the object of thought. Unnoticed affective stimuli can influence the complex cascade of thinking about political

policies and drive downstream attitudes toward these policies after the direct memory effects of the stimuli have decayed.

Procedures for affect contagion experiments. We conducted two experiments to test affect contagion. Both studies were conducted in the Laboratory for Experimental Research in Political Behavior at Stony Brook University. Participants were undergraduate students in Political Science courses (Study 1: $N = 224$; 48% male; 43% White; 55% Democrat, 18% Republican, 27% independent; Study 2: $N = 125$; 60% male; 42% White; 52% Democrat, 20% Republican, 28% independent).

In both studies, participants were consented and seated in front of personal computers in isolated experimental rooms. Before and after the manipulation, they reported their attitudes on a number of political issues including the target issues of illegal immigration (both studies) and energy security (only Study 1). Attitude position and strength were separately assessed using reliable multi-item scales, and a general attitude on the issue was computed as a multiplicative function of position and strength (Fishbein & Ajzen, 1975).

We manipulated affect in both studies through a primed thought-listing procedure in which the primes were simple cartoon faces, either smiling, frowning, or neutral. Primes were presented for 39 ms and carefully masked to control prime exposure, which is well below the threshold for awareness. Participants in the positive condition were presented smiley faces; those in the negative condition received frowning faces; those in the control condition were exposed to neutral faces, with experimental groups assigned randomly. This procedure manipulates exposure to unnoticed, incidental affect for our participants at a time when they were engaged in an explicit thought-listing task on political issues.

There were several important differences in the priming manipulation and thought-listing tasks across the two experiments.

On each trial in Study 1, exposure to a positive, negative, or neutral prime immediately preceded a general political-issue prompt and an empty response box, into which participants were asked to type a single response to the prompt. The prompt was either "The number of illegal immigrants coming to the U.S. will drastically increase in six years" or "The extent of energy consumption and the need for energy resources in the United States will drastically increase in the next decade." Upon completing each thought response, another prime exposure and thought-listing trial was presented, up to maximum of 10 per issue. We presented a block eliciting illegal immigration thoughts first, followed by an energy security block. For each issue, participants could end the block when they reported having no more thoughts. By design, number of exposures to the prime was variable, contingent on how much thinking the participant wanted to engage in. In total, there were between 2 and 10 exposures to the same prime/prompt for each issue, eliciting 0 to 10 policy thoughts. After all trials were complete, participants answered political knowledge and demographic questions, followed by a second administration of the attitude battery.

Study 2 differed from Study 1 in two respects: first, participants were exposed to a fixed rather than variable number of prime/thoughts trials so that we controlled number of exposures; and second, participants were prompted for thoughts with six specific policy statements on illegal immigration rather than a single general issue statement. Each priming trial involved a sequence of a one-second attention grid, a 13-ms forward mask, a 39-ms affective prime, and a 13-ms backward mask, followed by a prompt and thought-listing box. There were seven prime/thought-listing trials for each of the six policy prompts on illegal immigration, though participants were not forced to enter a thought before proceeding to the next trial. This procedure resulted in a fixed total of 42 prime presentations and the collection of 0 to 42 thoughts on illegal immigration. There was no second issue. The following thought-listing prompts were presented in random order.

Three anti-illegal immigrant prompts:

- "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."
- Three proillegal 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."

As with Study 1, participants were randomly assigned to three experimental conditions: negative affective primes (frowning cartoon face), positive affective primes (smiling cartoon face), or neutral primes (neutral cartoon face). After the manipulation phase was completed, participants answered political knowledge and demographic questions, they evaluated all six policy statements used to prompt thoughts, and they again completed the pretest attitude battery. As with Study 1, none of the participants reported in debrief any awareness of the affective primes or suspicion of our aims.

Variables. The thoughts that were listed in both studies were coded by two judges, blind to the experimental conditions and unaware of our research hypotheses, for their affective valence. Intercoder reliability was very strong, and the few disagreements were resolved by discussion. Our key measures of the valence of thinking, based on this content coding, are the number of positive and negative thoughts offered by each participant. For example, the thought "we need stricter laws and regulations to keep illegal immigrants from entering our country" was consistently coded as negative, while "they can come here and make good money" was coded as positive. The number of positive and negative thoughts are dependent variables in some analyses and mediators in others.

The critical independent variables are the experimental exposure to positive, negative, or neutral primes and the survey measures of general attitudes toward illegal immigration and energy security (position $\times$ strength).

Our sample was quite ambivalent about the six immigration policy statements from Study 2, so we constructed separate anti- and pro-immigration policy evaluation variables. These two policy evaluations provide our key dependent variables for the affective mediation analyses.

To summarize, we have measures of prior attitudes on the policies, we manipulate exposure to incidental affect, we code the number of positive and negative thoughts for each policy statement (separated into thoughts for pro- and anti-immigration policies), and we have postmanipulation policy attitudes, and in Study 2, evaluations of the pro- and anti-immigration policies.

Hypotheses. Our theoretical prediction that information or events encountered early in the processing stream, even when unnoticed and incidental to the objects of thought, will influence subsequent conscious thinking and reasoning leads directly to the affect contagion (arrow d in Figure 1) and mediation (path d-g-h) hypotheses tested in these studies: unnoticed positive primes will promote positive thoughts and inhibit negative thoughts, while unnoticed negative primes will promote negative and inhibit positive thoughts. Further, we expect that implicit affective primes will also influence subsequently reported attitudes and policy preferences, not directly but through the impact of the balance of thoughts that comes to mind. This is an indirect causal process from incidental, unnoticed feelings through explicit considerations, to ultimate policy attitudes.

It is important to stress that we do *not* predict direct affect transfer from our primes to subsequent attitudes. If such an effect occurs, it would have to be mediated by a generalized mood since direct activation of concepts in memory is known to dissipate within seconds and the effect we observe in these studies spans 30–45 minutes (Neely, 1977).

These experiments go beyond what has been reported in the political or social psychological literatures. This work, including our own previous work, demonstrates the direct effects of primes on momentary judgments. But we are often legitimately asked of what importance are effects that occur

Table 2. Numbers of Positive and Negative Thoughts in Study 1, by Priming Condition and Prior Attitude

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

within people's heads on a timescale of milliseconds to the stuff of politics. These studies are an attempt to address these important questions about the longer term, downstream consequences of incidental affect. Perhaps counterintuitively, but consistent with our studies on affect transfer described above, we predict that unnoticed, irrelevant events will shape political preferences *even when people think deeply* about an issue. In fact, our theory suggests the effect will be increased by thinking deeply.

Results for affect contagion. Did the unnoticed, incidental affective primes influence the valence of thoughts for illegal immigration? Tables 2 and 3 present the numbers of positive and negative thoughts generated as a function of prior attitudes and priming condition. As anticipated, supporters of illegal immigration and energy security policy consistently generated more positively and fewer negatively valenced thoughts than did opponents. In addition to this rather conventional result, however, we also see strong and consistent effects of subliminal smiling and frowning faces on the affective balance of thoughts reported on immigration and energy security.

An analysis of variance (ANOVA) on the number of negative thoughts about illegal immigration in Study 1 revealed main effects for prior attitude, $F(2, 182) = 2.92$, $p < .06$, and priming condition,

Table 3. Numbers of Positive and Negative Thoughts in Study 2, by Priming Condition and Prior Attitude

Pro-Illegal Immigration Policy Prompts				
Supporters of Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N=24)	7.83	3.32	1.88	1.54
Neutral Primes (N=21)	3.95	2.46	2.86	1.93
Negative Primes (N=19)	3.53	2.20	5.11	2.28
Opponents on Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N=13)	5.31	4.50	3.77	2.17
Neutral Primes (N=15)	3.27	2.71	3.60	2.72
Negative Primes (N=15)	2.47	2.29	5.60	3.20
Anti-Illegal Immigration Policy Prompts				
Supporters of Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N=24)	4.96	2.94	4.75	2.83
Neutral Primes (N=21)	2.38	1.72	5.62	3.19
Negative Primes (N=19)	1.26	1.15	8.89	3.65
Opponents on Illegal Immigration				
	Positive Thoughts		Negative Thoughts	
	M	*SD*	*M*	*SD*
Positive Primes (N=13)	6.31	2.53	4.23	3.19
Neutral Primes (N=15)	3.40	1.84	3.67	2.53
Negative Primes (N=15)	2.40	1.30	5.27	2.81

$F(2, 182) = 8.97$, $p < .001$, with no significant interaction. Positive thoughts showed the same pattern: main effects for prior attitude, $F(2, 182) = 3.57$, $p < .05$, and priming condition, $F(2, 182) = 8.89$, $p < .001$, and no interaction. Similar results obtained for energy security in Study 1 (though with weaker effects for conventional prior attitudes) and for immigration policy in Study 2. Follow up contrasts for both studies verified the clear patterns of means in Tables 1 and 2, showing that positive primes elicited significantly more positive and fewer negative thoughts and negative primes drove more negative and fewer positive thoughts than did neutral primes for both issues. We believe that the evidence of affect contagion on the balance of explicit thoughts is clear and compelling.

But how large are these effects and, in particular, how does the influence of emotive faces measure up to the influence of prior attitudes? For illegal immigration in Study 1, the effect size of the prime manipulation was medium-to-large (Cohen's $f = .31$), while the effect size for prior attitudes was small (.20 for positive thoughts and .18 for negative thoughts). Moreover, the effect size of the affective prime manipulation for energy security in Study 1 was on average .36, a large effect, while the average effect size for prior attitudes was just .12. Not only was there significant affect contagion from an incidental affective prime for both issues in Study 1, it was of *greater magnitude* than the

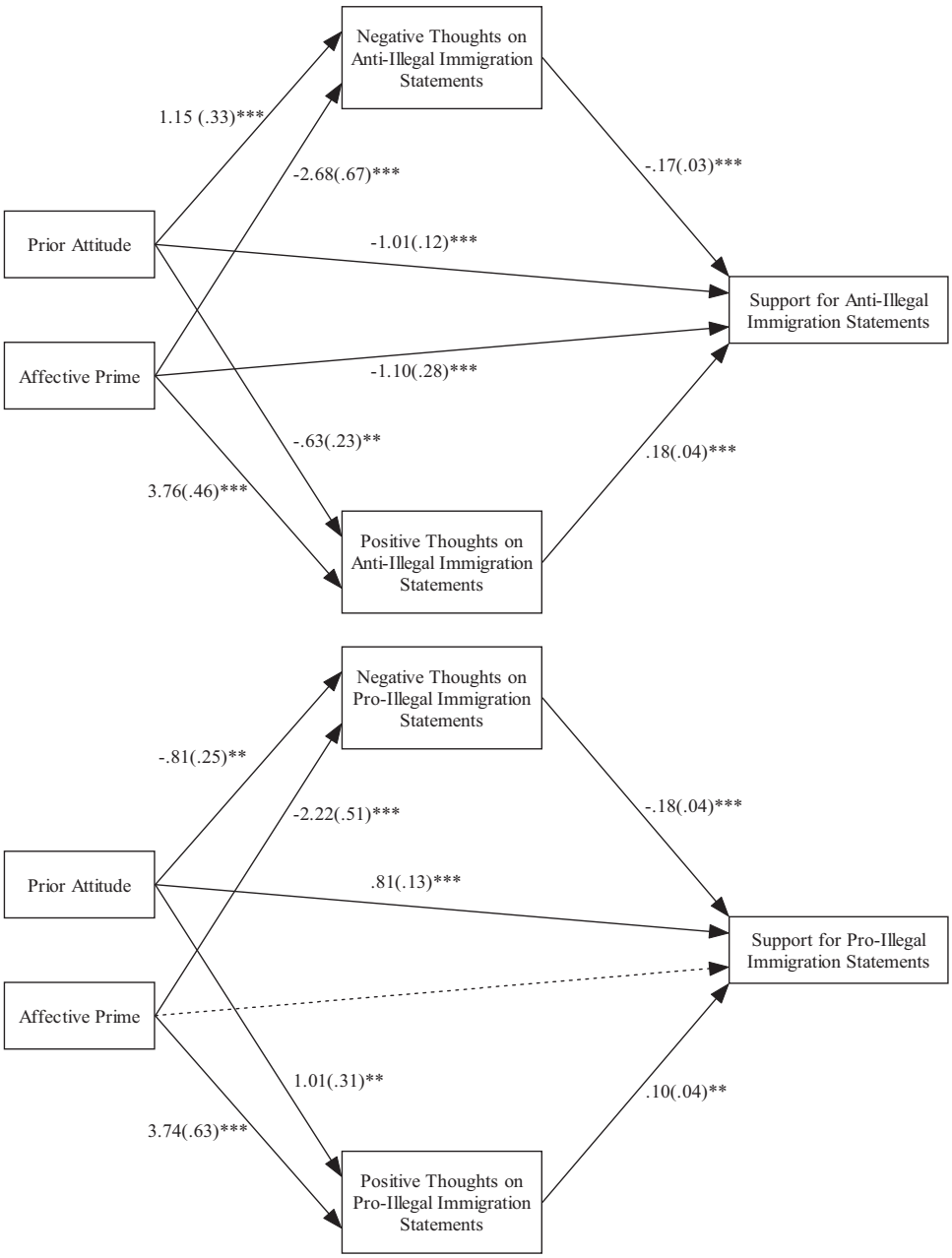

Figure 5. Indirect causal impact of affective primes on posterior attitudes, Study 2.

more conventional prior attitude effect. 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. Participants in Study 1 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.

But how lasting are these effects? Was there any influence on attitudes expressed on these issues collected 30–45 minutes later at the end of the study? Keeping in mind that prior attitudes should be a

very heavy anchor on posterior attitudes reported in the same study, we hypothesize that the incidental affect aroused by our priming manipulation will bias the generation of thoughts, and these thoughts will then influence subsequent policy evaluations in an indirect causal pathway. We will focus on the results from Study 2, which was designed to test indirect effects on multiple (6) policy attitudes on the issue of immigration.

Figure 5 reports a path regression analysis for evaluations of the anti- and pro-immigration policy statements, collected at the conclusion of Study 2. Responses to the three anti-immigration policies (top panel) and to the three pro-immigration policies (bottom panel) were combined, forming the ultimate dependent variables for these analyses. In this path analyses, we first regress the number of negative and positive thoughts as dependent variables on the affective primes and prior attitudes. We then regress policy evaluations on the number of negative and positive thoughts and prior attitudes. Unstandardized coefficients are reported with robust standard errors in parentheses and significance indicated by asterisks (*<.05; **<.01; ***<.001).

It is worth noting first that affect contagion replicates in these analyses. For both anti- and pro-immigration policy statements, the valence of thoughts is strongly influenced by the subliminal primes, and this effect is two to three times larger than the effect of prior immigration attitudes on the valence of thoughts. Fleeting images of cartoon smiley faces again have a *larger* effect than prior immigration attitudes on the valence of thoughts in response to illegal immigration policy prompts. But does this immediate effect on thoughts influence downstream evaluations of these policies collected up to 45 minutes later?

As expected in conventional models as well as in our own theory, prior attitude on immigration strongly and directly predicts posterior evaluations of anti- and pro-illegal immigration statements. But even in the context of this strong direct effect, we find the hypothesized indirect effects of affective primes on posterior policy attitudes. Consistently, negative thoughts about a policy, even when produced by an incidental and unnoticed affective prime, reduce support for that policy, while positive thoughts increase support. For anti-immigration policies, for example, the indirect effect of the prime on support is 1.13, while the indirect effect of prior attitude is −.31 (total direct and indirect effect of prior attitude is −1.32).

There is an unpredicted anomaly, however. In addition to the hypothesized indirect effect of primes on posterior attitudes, we find a 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. Given what is known about the fleeting duration of concept activation (Barsalou, 1992; Eysenck & Keane, 2010; Neely, 1977), this result cannot be a direct effect of activation, but it could be a mood effect. Participants in the positive condition may be put in a positive frame of mind by subliminal exposure to 42 smiling faces, while those in the negative condition feel more diffuse negativity, in much the same way that a sunny day can strongly influence reported life satisfaction. The positive mood may make subjects less likely to support "nasty" immigration policies, while those in a negative mood may be more inclined to punish illegal immigrants. This remains untested speculation at this time, however, and the finding is unexpected.

We do not find a similar anomaly for pro-immigration policy evaluations. The path analysis for pro-immigration policies supports all expectations. Negative thoughts reduce support for a policy, and positive thoughts increase support, even when these thoughts are heavily influenced by an unnoticed cartoon face. Taken together, the analyses reported in Figure 5 support our affective mediation hypothesis but deserve independent replication and the anomalous direct effect of primes on support for anti-immigration statements require further study.

Discussion. Our findings on affect transfer and affect contagion suggests a conclusion different from the conventional emphasis on the power of deliberation. Unnoticed affective cues, even when they are irrelevant to the objects of thought, change how and what we think about political issues and public policies. We have now shown in multiple studies the immediate effects of affective primes

presented out of awareness, and in this section we have extended these findings to influences through thought processes on downstream evaluations reported 30–45 minutes after exposure to the primes.

Affective primes, in our studies chosen to be politically irrelevant and semantically unrelated, cause considerations congruent with feelings to be retrieved or constructed in the course of thinking about political issues about which our respondents had strong preexisting attitudes. The balance of thoughts in turn has a robust effect on evaluations of specific policy recommendations. Conscious political thinking and deliberation, which we conventionally treat as causally prior to our attitudes and policy positions, in fact rationalizes the joint effect of these attitudes and incidental affective primes on our thinking, all outside of our awareness.

We are often challenged by colleagues and students to answer a fundamental question: Who cares what happens at 39 ms? Politics happens on a scale of days, months, years, we are told. The two experiments reported in this section suggest an answer: What happens at 39 ms influences all subsequent thought processes and drives evaluations that occur far down the stream of information processing. Such 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, all of which are explained in our theory as the result of unnoticed influences of early political or contextual cues on the stream of political information processing.

General Discussion

Thinking about political candidates, groups, or issues is suffused with feelings, sometimes the result of hot cognitions about the objects of thought and sometimes the result of incidental cues, but always with preconscious beginnings. These feelings transfer easily to political objects and are contagious throughout the cascades of subsequent thought, and we may never become fully aware of the causal processes at work. The most impactful political symbols, ideas, and events, we believe, will be those that trigger *both* feelings and considerations in mutually reinforcing ways, and our *JQP* theory outlined in Figure 1 provides an explanation for why this is so. The uncontrolled affective reaction to a political event directly signals the desirability of one person, group, idea over another and systematically guides the encoding, search, retrieval, interpretation, and evaluation of considerations in ways that promote affectively congruent rationalization effects. Affect is temporally and causally primary.

We have found support for many of *JQP*'s basic expectations, including hot cognition (arrow a in Figure 1), affect transfer (arrows f), affect contagion (arrow d), and mediation (path b-d-g-h). Elsewhere, we have reported studies testing motivated reasoning (arrow e). Three basic processes appear to promote the judgmental biases we and others uncover. First, the hardwired associative architecture of long-term memory promotes networks of connections among thoughts, feelings, and intentions that enable rapid and effective response patterns but may also promote bias and misperception. Second, these associations may be sculpted by experience into densely interconnected networks characteristic of sophisticates, enabling powerful inferential capacity along with rationalization and motivated reasoning. Third, priming is the key mechanism guiding the activation process as associations built through experience spontaneously inform conscious and unconscious judgment and choice.

Our discipline's focus on conscious, introspectively accessible considerations fails to explain how citizens think, reason, and act politically. Required is a dual-process model of attitude formation and expression that incorporates both conscious and implicit mechanisms, a model like *JQP*. However, though we know that unconscious processing drives sampling, comprehension, interpretation, and evaluation in ways that systematically bias thinking and behavior, we need to better specify the underlying mechanisms and processes (Kim et al., 2010; Lodge & Taber, 2013).

Building on our work and that of others, we believe that the coming generation of research will show that feelings are hardwired in affective neural connections that link seeing to feeling to thinking

to doing. It will prove impossible, despite the continuing influence of Enlightenment views of rational man, to tease feelings apart from cognitions and behaviors, or keep affect independent of the evaluation of evidence. Affect will prove to be the strongest predictor of thinking and behavior, as hinted in our affect contagion studies. Were "cool" considerations possible, and we do not think they are, the link to behavior would be tepid and weak because of their lack of motivational thrust.

Across our research program, we consistently find biased processing at every stage of the evaluative process, with the strength of unnoticed automatic priming far exceeding our expectations as well as our comfort zone. In virtually all of our experiments, we go through contortions to encourage evenhandedness, careful thought, and conscious appraisal of evidence and arguments, but we find precious little reason to believe that citizens can overcome their prior attitudes or override the effects of incidental primes. And there is a good reason why we find bias, bias everywhere: Hot cognition, affect transfer, affect contagion, motivated reasoning are all rooted in the very architecture of memory. The associative structures and processes of memory are hardwired in our physiology, along with the mechanism of spreading activation which "moves" associations in LTM into consciousness. This relational nature of human memory promotes coherent thinking and behavior, while simultaneously undermining evenhanded treatment of information. Given that we are built this way through evolutionary processes, we should be asking what is the value of bias for survival? Is it not possible that automaticity has advantages over conscious control?

We have little confidence that cognitively mediated strategies will be successful for changing strong attitudes and habits. But what about relying on gut feelings? One implication of *JQP* is that hot cognition will work best when decision-makers confront complex, multidimensional choices (Lodge & Taber, 2013; Taber & Lodge, 2006; Taber & Steenbergen, 1995). People can work through the pros and cons for simple decisions reasonably well, but when the numbers of alternatives and dimensions of choice increase, thinking hard and long muddles rather than clarifies the choice (Gigerenzer, 2007). Automaticity, it seems, helps solve the problem of complexity and overload, unless we artificially impose conscious control.

But how should we treat questions of control, free will, and responsibility, given the growing body of findings about the dubious value of conscious control? An interesting possibility is that humans possess some automatic control processes for socially relevant thinking and behavior, just as we have automatic control processes for autonomic regulation. Violent behavior, for example, is likely inhibited (for most people) through automatic control mechanisms that do not require one to stop and think about consequences. Emotions may play key roles in such automatic regulation of behavior. Moreover, the very associative memory processes that sometimes promote bias can work to prevent bias. Changes in attitudes and associations can be learned through classical or instrumental conditioning, just as prejudices and bad habits can be unlearned. Attitudes toward same-sex marriage, for example, have undergone rapid change over the past several decades, and it seems clear this cannot be fully explained through generational replacement. New beliefs and feelings have been widely adopted, and we believe it is unlikely this was the result of careful reconsideration of priors. It is much more likely, we think, that these new attitudes and considerations have formed unconsciously through direct and indirect experience and an increasingly consistent societal message of support for marriage equality.

The most interesting and important questions about human behavior concern cause, responsibility, and control, but we do not yet have a satisfactory understanding of the basic underlying mechanisms that give meaning to these questions. Our research exploring automaticity in political-information processing and our dual-process theory that roots feeling, thinking, and doing in the associative architecture of memory is a valuable early step toward a process-valid model of political behavior. Our model, *JQP*, has been tested in the laboratory and through computational experiments, but it needs further empirical validation and elaboration. We would welcome replication of some of our more surprising results, and we would especially like to see new progress on control mechanisms. As it stands, *JQP* paints a very pessimistic view of human possibilities. We fear this portrait of "the

cognitive monster" may be accurate, but we think control processes deserve more study. Our gut tells us this last optimism may be rationalization.

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REFERENCES

Acker, F. (2008). New findings on unconscious versus conscious thought in decision making: Additional empirical data and meta-analysis. *Judgment and Decision-Making*, *33*(4), 292–303.

Allport, G.W. (1954). *The nature of prejudice*. Cambridge, MA: Perseus Books.

Amodio, D., & Mendoza, S. (2010). Implicit intergroup bias: Cognitive, affective, and motivational underpinnings. In B. Gawronski & K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 353–374). New York, NY: Guilford.

Adorno, T. W., Frenkel-Brunswik, E., Levinson, D., & Sanford, N. (1950). *The authoritarian personality*. New York, NY: Harper & Row.

Arendt, H. (1963). *Eichmann in Jerusalem: A report on the banality of evil*. New York, NY: Viking.

Bargh, J. (1994). The four horseman of automaticity: Awareness, intention, efficiency, and control in social cognition. In R. Wyer & T. Srull (Eds.), *Handbook of social cognition: Basic processes* (pp. 1–40). Hillsdale, NY: Erlbaum.

Bargh, J. (1999). The cognitive monster: The case against controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 361–382). New York, NY: Guilford.

Bargh, J., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, *62*(6), 893–912.

Bargh, J., Gollwitzer, P., Lee-Chai, A., Barndollar, K., & Troetschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology*, *81*(6), 1014–1027.

Barsalou, L. (1992). *Cognitive psychology: An overview for cognitive scientists*. Hillsdale, NJ: Erlbaum Associates.

Berelson, Bernard., Lazarsfeld, P., & McPhee, W. (1954). *Voting: A study of opinion formation in a presidential campaign*. Chicago, IL: University of Chicago Press.

Black, D. (1948). On the rationale of group decision-making. *Journal of Political Economy 56*(1), 23–34.

Bradley, M, & Lang, P. (1999). Affective norms for English words (ANEW): Instruction manual and affective ratings. Technical Report C-1. The Center for Research in Psychophysiology, University of Florida.

Burdein, I., Lodge, M., & Taber, C. S. (2006). Experiments on the automaticity of political beliefs and attitudes. *Political Psychology*, *27*(3), 359–72.

Byrne, D., London, O., & Reeves, K. (1968). The effects of physical attractiveness, sex, and attitude similarity on interpersonal Attraction. *Journal of Personality*, *36*(2), 259–272.

Coronel, J. C., & Kuklinski, J. H. (2012). Political psychology at Stony Brook: A retrospective. *Critical Review*, *24*(2), 185–98.

Custers, R., & Aarts, H. (2010). The unconscious will: How the pursuit of goals operates outside of conscious awareness. *Science*, *329*(5987), 47–50.

Damasio, A. (1994). *Descartes' error: Emotion, reason and the human brain*. New York, NY: Putnam.

Darley, J. M. (1992). Social organization for the production of evil. *Psychological Inquiry*, *3*(2), 99–218.

Devine, P. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*(1), 5–18.

Dijksterhuis, A. (2004). Think different: The merit of unconscious thought in preference development and decision making. *Journal of Personality and Social Psychology*, *87*(5), 586–598.

Dijksterhuis, A, Bos, M., Nordgren, L., & van Baaren, R. (2006). On making the right choice: The deliberation-without-attention effect. *Science*, *311*(5763), 1005–1007.

Downs, A. (1957). *An economic theory of democracy*. New York, NY: Harper & Bros.

Druckman, J. N. (2012). The politics of motivation. *Critical Review*, *24*(2), 199–216.

Erisen, C., Lodge, M., & Taber, C. (2014). Affective contagion in political thinking. *Political Psychology*, *35*(2), 187–206.

Eysenck, M., & Keane, M. (2010). *Cognitive psychology: A student's handbook*. East Sussex, UK: Psychology Press.

Fazio, R. (1992). Variability in the likelihood of automatic attitude activation: Data reanalysis and Commentary on Bargh, Chaiken, Govender and Pratto (1992). *Journal of Personality and Social Psychology*, *64*(5), 753–758.

Fazio, R., Sanbonmatsu, D., Powell, M., & Kardes, F. (1986). On the automatic activation of attitudes. *Journal of Personality and Social Psychology*, *50*(2), 229–238.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Forgas, J. (1995). Mood and judgment: The affect infusion model (AIM). *Psychological Bulletin*, *117*(1), 39–66.

Friedman, J. (2012). Motivated skepticism or inevitable conviction? Dogmatism and the study of politics. *Critical Review*, *24*(2), 131–55.

Gigerenzer, G. (2007). *Gut feelings: The intelligence of the unconscious*. New York, NY: Viking Penguin.

Granberg, D., & Holmberg, S. (1986). Political perception among voters in Sweden and the US: Analyses of issues with explicit alternatives. *Political Research Quarterly*, *39*(1), 7–28.

Greenwald, A., & Banaji, M. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*(1), 4–27.

Hamilton, D., & Sherman. S. (1996). Perceiving persons and groups. *Psychological Review*, *103*, 336–355.

Heider, F. (1958). *The psychology of interpersonal relations*. Hillsdale, NJ: Lawrence Erlbaum.

Hofmann, W., & Wilson, T. (2010). Consciousness, introspection, and the adaptive unconscious. In B. Gawronski & K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 197–215). New York, NY: Guilford.

Huber, G., & Lapinski, J. (2006). The "race card" revisited: Assessing racial priming in policy contests. *American Journal of Political Science*, *50(*2), 421–440.

Huddy, L., & Gunnthorsdottir, A. (2000). The persuasive effect of emotive visual imagery: Superficial manipulation or the product of passionate reason. *Political Psychology*, *21*(4), 745–778.

Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology*, *3*, 1–24.

Kim, S.-Y., Taber, C., & Lodge, M. (2010). A computational model of the citizen as motivated reasoner: Modeling the dynamics of the 2000 presidential election. *Political Behavior*, *32*(1), 1–28.

Kinder, D., & Sanders, L. (1996). *Divided by color: Racial politics and democratic ideals*. Chicago, IL: University of Chicago Press.

Kruglanski, A. W., & Boyatzi, L. M. (2012). The psychology of closed and open mindedness, rationality, and democracy. *Critical Review*, *24*(2), 217–232.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, *108*(3), 480–498.

Lau, R., & Redlawsk, D. (1997). Voting correctly. *American Political Science Review*, *91*(3), 585–598.

Lavine, H., Johnson, C., & Steenbergen, M. (2012). *The ambivalent partisan: How critical loyalty promotes democracy*. New York, NY: Oxford University Press.

Libet, B. (1985). Unconscious cerebral initiative and the role of conscious will in voluntary action. *Behavioral and Brain Science*, *8*(4), 529–539.

Lodge, M., & Taber, C. (2000). Three steps toward a theory of motivated political reasoning. In A. Lupia, M. McCubbins, & S. Popkin (Eds.), *Elements of reason: Cognition, choice, and the bounds of rationality* (pp. 183–213). New York, NY: Cambridge University Press.

Lodge, M., & Taber, C. (2005). The automaticity of affect for political leaders, groups, and issues: An experimental test of the hot cognition hypothesis. *Political Psychology*, *26*(3), 455–482.

Lodge, M., & Taber, C. S. (2013). *The rationalizing voter*. New York, NY: Cambridge University Press.

Milgram, S. (1974). *Obedience to authority: An experimental view*. London, UK: Tavistock.

Monteith, M. J., Lybarger, J. E., & Woodcock, A. (2009). Schooling the cognitive monster: The role of motivation in the regulation and control of prejudice. *Social and Personality Compass*, *3*, 211–226.

Moskowitz, G. B., Gollwitzer, P. M., Wasel, W., & Schaal, B. (1999). Preconscious control of stereotype activation through chronic egalitarian goals. *Journal of Personality and Social Psychology*, *77*, 167–184.

Neely, J. (1977). Semantic priming and retrieval from lexical memory: Roles of inhibitionless spreading activation and limited-capacity attention. *Journal of Experimental Psychology: General*, *106*(3), 226–254.

Nyhan, B., & Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior*, *32*(2), 303–330.

Redlawsk, D. (2002). Hot cognition or cool consideration? Testing the effects of motivated reasoning on political decision making. *Journal of Politics*, *64*(4), 1021–1044.

Ross, L. (2012). Reflections on biased assimilation and belief polarization. *Critical Review*, *24*(2), 233–245.

Sidanius, J., & Pratto, F. (2012). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York, NY: Cambridge University Press.

Stagner, R. (1942). Some factors related to attitude toward war. *Journal of Personality and Social Psychology*, *16*, 131–142.

Taber, C. S., Cann, D., & Kucsova, S. (2009). The motivated processing of political arguments. *Political Behavior*, *31*(2), 137–155.

Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, *50*(3), 755–769.

Taber, C. S., & Lodge, M. (2012). The scope and generality of automatic affective biases in political thinking: Reply to the symposium. *Critical Review*, *24*(2), 247–268.

Taber, C. S., & Steenbergen, M. (1995). Computational experiments in electoral behavior. In M. Lodge & K. McGraw (Eds.), *Political judgment: Structure and process* (pp. 141–178). Ann Arbor, MI: University of Michigan Press.

Thompson, M., Zanna, M., & Griffin, D. (1995). Let's not be indifferent about attitudinal ambivalence. In R. Petty & J. Krosnick (Eds.), *Attitude strength: Antecedents and consequence* (pp. 361–386). Hillsdale, NJ: Erlbaum.

Tourangeau, R., Rips, L., & Rasinski, K. (2000). *The psychology of the survey response*. New York, NY: Cambridge University Press.

Uleman, J., Newman, L., & Moskowitz, G. (1996). People as flexible interpreters: Evidence and issues from spontaneous trait inference. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 211–279). San Diego, CA: Academic Press.

Wegner, D., & Bargh, J. (1998). Control and automaticity in social life. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 446–496). New York, NY: McGraw-Hill.

Wilson, T., & Schooler, J. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, *60*(2), 181–192.

Zaller, J. (1992). *The nature and origins of mass opinion*. New York, NY: Cambridge University Press.

Zaller, J., & Feldman, S. (1992). A simple theory of survey response: Answering questions versus revealing preferences. *American Journal of Political Science*, *36*(3), 579–616.