The Emotional-Cognitive Processing Model

A proposal combining emotional and cognitive processing

This paper begins where Nabi (2002a) left off; attempting to integrate a large body of emotional and cognitive processing literature to depict how people process emotionally charged messages. It argues that such processing is dual-routed – automatic and extended. Automatic processing is characterized by reflexive responses, and triggered by the lack of opportunity to cognate over the message. Extended processing is characterized by biased reasoning, and further divided by whether the elicited emotion triggers a consonant or dissonant state. An emotional maintenance bias occurs in consonant states, guiding individuals to message accept. In dissonant states, individuals will accept the message, if sufficient self and response efficacy is perceived. Finally, the paper proposes the Emotional-Cognitive Processing Model as a framework, providing a reference point for future discourse and examination.
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The Emotional-Cognitive Processing Model

Haidt’s (2005) book, *The Happiness Hypothesis*, provides an intriguing metaphor for how emotions and rational thoughts interact. The book Switch, however, provides a tantalizing summary of Haidt’s book; one that I cannot match. The authors explain:

“Haidt says that our emotional side is an Elephant and our rational side is its Rider. Perched atop the Elephant, the Rider holds the reins and seems to be the leader. But the Rider’s control is precarious because the Rider is so small relative to the Elephant. Anytime the six-ton Elephant and the Rider disagree about which direction to go, the Rider is going to lose. He’s completely overmatched.

Most of us are all too familiar with situations in which our Elephant overpowers our Rider. You’ve experienced this if you’ve ever slept in, overeaten, dialed up your ex at midnight, procrastinated, tried to quit smoking and failed, skipped the gym, gotten angry and said something you regretted, abandoned your Spanish or piano lessons, refused to speak up in a meeting because you were scared, and so on. Good thing no one is keeping score. The weakness of the Elephant, our emotional and instinctive side, is clear: It’s lazy and skittish, often looking for the quick payoff (ice cream cone) over the long-term payoff (being thin)…. 

But what may surprise you is that the Elephant also has enormous strengths and that the Rider has crippling weaknesses. The Elephant is not always the bad guy. Emotion is the Elephant’s turf – love and compassion and sympathy and loyalty. That fierce instinct you have to protect your kids against harm – that is the Elephant. That spine-stiffening you feel when you need to stand up for yourself – that is the Elephant….

If you want to change things, you’ve got to appeal to both. The Rider provides the planning and direction, and the Elephant provides the energy. So if you reach the Riders of your
team but not the Elephants, team members will have understanding without motivation. If you reach their Elephants but not their Riders, they’ll have passion without direction. In both cases, the flaws can be paralyzing. A reluctant Elephant and a wheel-spinning Rider can both ensure that nothing changes. But when Elephants and Riders move together, change can come easily” (Heath & Heath, 2010, p. 4).¹

This paper reviews the current state of social-psychological discourse regarding emotions and cognitive elaboration, arguing for an integrated model that incorporates both emotional and argument strength variables. Nabi (1999) was the first to begin this discussion of emotional-cognitive processing, and this paper aims to begin where she left off. It begins with a thorough literature review and extrapolates from well-found theories, models and studies. Arguments are made for fundamental tenants of any emotional-cognitive processing model – namely, a dual-route model that focuses on mood regulation; and I proceed with proposing a model of my own. The paper and proposed model is intended to provide a framework and reference point for future discourse, where ideas can be further examined and refined.

¹ The large quote was not done out of laziness or lack of time. It was a conscious decision, after recognizing my synopsis of Haidt was grossly parallel to Heath’s and Health’s. I am confident in the quality of this capstone, and wished to safeguard against plagiarism claims, which may detract from the paper.
Literature Review

Cognitive Response Models

Cognitive Dissonance Theory

Festinger’s (1957) cognitive dissonance theory (CDT) asserts people engage in dissonance reduction by seeking consistency between one’s beliefs and actions. The four methods people use to relieve internal tension are selective attention, retention, perception and exposure.

CDT asserts that people have selective revelations and attitudinal shifts, if minimal justification is present, due to internal tension. Festinger’s primary assumption is that people are motivated to achieve consonance. Cognitive dissonance is a mental state where people “find themselves doing things that don’t fit with what they know, or having opinions that do not fit with other opinions they hold.” The perceived asymmetry in one’s beliefs, or attitudes, is internally unpleasant, triggering actions to resolve the disequilibrium of the dissonant relationship. These relationships are stratified as the dissonance’s magnitude varies by the significance of the beliefs’ centrality and disconnect, which may be altered, or resolved, through one’s justification of the discrepancy (Festinger & Carlsmith, 1959).

Selective exposure is employed to reduce dissonance by interpreting ambiguous, or mixed, information so that it becomes consistent with held beliefs (Cotton, 1985). For example, a smoker may not be social with people that are fervent anti-smokers, since hearing about health dangers from them could cause dissonance. The criterion for one’s selection is attitudes, moods,

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2 Cognitions that are interpreted as more integral to one’s self-conception.
3 The degree of discrepancy between cognitions and the proportion of dissonant and consonant cognitions.
interests and needs. Selective exposure highlights how individuals are gatekeepers themselves, choosing the sources and information that surrounds them. Hence, people choose, or avoid, who they socialize with, and what they read, listen to and watch.

**Theory of Reasoned Action**

The Theory of Reasoned Action ("TRA") asserts “that people consider the implications of their actions before they decide to engage or not engage in a given behavior” (Ajzen & Fishbein, 1980, p. 5). Thus, according to TRA, individual’s behavioral intention is the most accurate predictor of ultimate behavior, although behavioral controls and unconscious deliberation both contribute to these decisions (Ajzen, 1991).

TRA outlines the components that form a person’s behavioral intention – personal attitudes and subjective norms towards the relevant behavior. The personal attitudes component involves the specific action being examined, through analysis of available information. An attitude is formed through individual’s perceived likely outcomes, and their evaluation of those outcomes. The subjective norms factor considers both one’s beliefs concerning how others, or groups, will react to the behavior, and the person’s motivation to comply with their standards. Each component is not weighted equally; rather, both are considered to form a behavioral intention.

**Attitude-Function Theory**

Even decisions based on rational logic are guided by attitudes (Katz, 1960). Without these knowledge based attitudes decisions would be tremendously arduous. For example, people do not weigh the costs (price, calories, etc.) and benefits (taste, appearance, fulfillment, etc) of
each menu item at Burger King. Instead, Burger King consumers refine their selection based on previously developed attitudes – meat, health or price preferences, for instance. These attitudes, depending on its strength, simplify where people begin to weigh their choices – maybe disregarding the chicken or salad menu options – and how quickly they can come to a conclusion. These types of attitudes summarize previous knowledge, allowing individuals to make decisions without conscious elaboration (Kardes, 1986; Lingle & Ostrom, 1981). Thus, attitudes serve a function (Katz, 1960) – in the example above, the attitudes served a knowledge function.

Other than knowledge, there are three other primary functions attitudes may fulfill, according to Attitude Function Theory (AFT) – value expression, ego defensive and adjustment. Value expressive attitudes help communicate personal traits and social opinions to others. Attitudes that serve an ego defensive function guard against perceived, real or imagined, threats, allowing individuals to feel good about their actions or beliefs. Finally, Adjustment attitudes serve to guide people towards pleasurable outcomes, and avoid painful ones (Kardes & Cronley, 2000). Furthermore, AFT asserts that different persuasive techniques will be more influential for each different type of attitude. In fact, messages that are congruent with its attitude function receive more attention and careful consideration, than messages that are mismatched (Petty & Wegener, 1998). Hence, facts may influence knowledge-based attitudes, but may be ineffectual in persuading ego defensive attitudes.

Moreover, the outcome focus for each functional attitude is bidirectional – promotion or prevention – altering the effectiveness of a persuasive technique. Promotion focuses on achieving a desired stated, while prevention orientated messages aims to avoid an undesired result (Higgins, 1998). Promotion-focused ads, for instance, may use logical arguments
(knowledge), celebrity endorsements (value expressive), authorities (ego defensive) or pleasure appeals (adjustment); and prevention focused ads, for instance, may use surprise (knowledge), unsociable (value expressive), fear (ego defensive) or pain appeals (adjustment). Surprisingly, AFT primarily recommends emotional appeals in prevention-focused messages – these emotions are negative emotions – while only recommending emotional appeals in promotion-focused adjustment messages – pleasure, a positive emotion.

**Cognitive Response Models Extrapolations**

**Cognitive Dissonance Theory**
- People want to resolve dissonance states, as it is unpleasant.
- People attempt to maintain consonance through selectivity.

**Theory of Reasoned Action**
- People’s behavioral intention or sought goal, which is based on their attitudes and perceived norms, is an accurate predictor of their ultimate behavior.

**Attitude-Function Theory**
- Attitudes can summarize previous knowledge, allowing individuals to make decisions without conscious elaboration.
- Attitudes can express a person’s values, communicating personal information to others.
- Attitudes can serve to safeguard their emotional wellbeing.
- Attitudes can guide people to more optimal outcomes.

**Cognitive Dual-Processing Models**

**Elaboration Likelihood Model**

The elaboration likelihood model of persuasion (“ELM”) is a model of how attitudes are formed or changed (Petty & Cacioppo, 1986). The ELM assumes that people are motivated to
make “correct” decisions when confronted with a message. The motivation, however, is hampered by the fact that people have limited cognitive resources. This limitation forces people to ration their cognitive resources, forcing them to weigh the “correctness” of a decision with the resources necessary to reach it. Hence, people are motivated to make “correct” decisions in an efficient manner.

ELM proposes two routes an individual may process messages through – central and peripheral (Petty & Wegener, 1998). The route used is determined by a person’s ability and motivation to process a message or stimuli. Central-route processing occurs when a person is both able and motivated to examine the message. In this route, there is a high likelihood of elaboration, and people will indulge in more effortful evaluation of a message or argument, generating favorable or unfavorable thoughts (such as counter-arguments) in relation to existing attitudes and relevant-schemas. Peripheral-route processing, in contrast, occurs when a person lacks either ability or motivation to examine a message. The peripheral-route does not involve extensive cognitive processing of the message; instead, it involves less stringent evaluation that relies on heuristics and cues. For instance, peripheral processing relies on information such as appearance (e.g. Chaiken, 1987), perceived credibility of the source (e.g. Petty & Cacioppo, 1996), and other so-called rules of thumb. High cognitive elaboration does not occur via peripheral processing, which emphasizes patterns and heuristics.

Though ELM has two processing routes, both routes are often used when processing a message, creating a continuum for elaborative thought (Petty & Wegener, 1998). Petty and Wegener (Ibid, p. 5) note, “… central and peripheral processes would co-occur and jointly influence judgments.” Hence, a person’s scrutiny level towards a message occurs along an elaboration continuum, where solely peripheral-route processing is at one pole and solely
central-route processing is at the other. For example, if a person was to process a speech primarily using the peripheral-route, they might use heuristics but still scrutinize each heuristic’s applicability – the scrutiny of the heuristics would arise from the central-route’s minimal involvement. Likewise, a person who processes the speech primarily through the central-route would scrutinize the logic and reasoning; but, after careful evaluation of the speaker’s first five arguments and rejection of each one, the person might reject the sixth argument with less stringent scrutiny, based on their previous disagreement with the speaker. Thus, the person would employ a heuristic that assumes disagreement with the next message, due to past experience.

Persuasion through central processing is generally regarded as preferable over peripheral, because attitudinal change is more enduring when it originates through central processing (Ibid.). When individuals scrutinize a message through the central-route, they access issue-relevant attitude schema and invest cognitive time and effort in evaluating and comparing the message to their existing schema. This scrutiny produces conclusions that are more salient and enduring because the message becomes interconnected and integrated with relevant existing schema, thus internalizing the message.

Peripheral-route processing is characterized as less enduring and cannot cause attitude change. Low levels of scrutiny may access irrelevant-schema (Ibid.; Cialdini, Herman, Levy, Kozlowski, & Petty, 1976). Moreover, the lack of cognitive elaboration means the message does not become embedded or incorporated within existing schema. Both these traits of peripheral processing cause the message’s effects to be less salient and impactful over time.

In addition to internalization/persistence, central processing is more likely to create congruent behavior to formed attitudes and resistance to contrary beliefs (Petty & Cacioppo,
1986), resulting in the message’s sought verdict. Oftentimes, communication campaigns aim to have their messages processed centrally, in order that they last a lengthy campaign. An important exception to such a tactic, however, concerns those messages that cannot withstand high levels of scrutiny. For example, some claimed President Obama’s, then candidate, undergraduate senior thesis spoke poorly of the American’s Founding Fathers, which is unequivocally untrue (Saul, 2009). The rumor was only believed by those who were very biased against Obama, as the bias caused them to peripherally accept the message; and, those who scrutinized the message rejected it, due to its implausibility.

**Heuristic-Systematic Model**

The Heuristic-Systematic Model (HSM) is a similar dual-processing theory to ELM, and is often treated with little to no distinction in the literature. Heuristic processing is akin to ELM’s peripheral-route, which uses simple decision rules; and systematic processing is akin to the central-route, which is more analytic (Chaiken, Giner-Sorolla, & Chen, 1996). The significant difference between the two models, however, is their treatment of motivation. While both models assume people desire to hold accurate beliefs, HSM distinguishes itself by basing its predictions on the sufficiency principal. The principal “embodies the tradeoff between minimizing effort and reaching an adequate level of confidence in one’s judgment” (Chaiken, et al., 1996, p. 554). Moreover, HSM also recognizes three other broad categories of motivation – accuracy, defense and impression.

The sufficiency principal asserts that a continuum of judgmental confidence is formed for each decision, which is predicts peoples’ processing response (Chaiken, et al., 1996). The continuum charts an individual’s actual confidence and desired confidence, predicting a person
will process until their actual and desired confidence is the same, given the person has adequate capacity. If the gap between actual and desired confidence is small, heuristic processing is more likely, because the minimal processing would be sufficient to close the gap between the two. Systematic processing occurs when heuristic processing is insufficient to increase desired subjective confidence. Thus, the likelihood of systematic processing can be increased by either increasing a person’s desired confidence or lowering their level of actual confidence.

Chaiken and colleagues explain, “Accuracy motivation is the desire to hold attitudes and beliefs that are objectively valid” (1996, p. 556). As noted, the sufficiency principal dictates the preferred processing method. When a person is motivated to have accurate attitudes or beliefs, however, their desired subjective confidence would be higher than those with lower accuracy motivation. Furthermore, accuracy motivation makes individuals more sensitive to biased sources and poor, or inaccurate, heuristics.

Defense motivation drives individuals to hold attitudes and beliefs that are congruent with their existing “self-definitional” attitudes and beliefs (Chaiken, et al., 1996). Here, HSM relies heavily on Rokeach’s (1968) work regarding terminal values. A terminal value is a core moral belief to an individual, which in turn guides and shapes attitudes and beliefs key to the self. Defense motivation often guards attitudes and beliefs regarding: “social identities such as one’s gender, ethnicity, religion, or profession; attitudes supporting one’s material vested interests; and beliefs about personal attributes such as intelligence, social sensitivity, and healthfulness” (Chaiken, et al., 1996, p. 557). Thus, people with a high defense motivation would, consciously or unconsciously, preserve their self-concept, rather than maintain an accurate world representation. The processing principal that is used to preserve self-definitional attitudes and beliefs is predominately selectivity, which was detailed above in the CDT section.
Impression motivation is the desire to express attitudes and beliefs that attain situation-specific interpersonal goals. A person with a high impression motivation would be most concerned with “interpersonal consequences associated with expressing a given judgment in a particular social context” (Chaiken, et al., 1996, p. 563, emphasis in original). Like defense motivation, selectivity is used, but in a manner that matches the situation-specific goals. An athletic student, for example, may focus more dominantly on argument that support smoking, if they are motivated by impression and smoking would produce a desired social outcome. In contrast, if smoking caused an undesired social consequence, an impression motivated person would likely be more sensitive to anti-smoking arguments.

**Cognitive Dual-Processing Models Extrapolations**

*Elaboration Likelihood Model*
- People are motivated to make “correct” decisions, but are restricted due to limited cognitive resources.
- If a person is motivated and able to process a message, they will engage in more effortful scrutiny called central route processing.
- Effortful scrutiny, central route processing, causes more enduring, lasting and congruent attitude change.
- If a person lacks either motivation or ability to process a message, they will heavily rely on heuristics, which is called peripheral route processing.
- Heuristic processing does not cause attitude change.
- Both routes of processing are often used simultaneously.

*Heuristic-Systematic Model*
- People will scrutinize a message until their actual confidence meets their desired confidence.
- There are different types of motivations that drive message processing – accuracy, defense and impression.
Emotional Response Models

Extended Parallel Processing Model

Witte’s Extended Parallel Process Model (EPPM) advances Leventhal’s work to explain people’s responses to fear appeals (Witte, 1992). A message’s components are appraised on the basis of threat and efficacy by individuals. There are four components of a fear appeal – susceptibility, severity, self-efficacy and response-efficacy. First, one appraises the threat, which is based on the perceived severity and susceptibility of the danger or harm. One’s motivation to appraise the message’s efficacy is dependent on their perceived threat. The higher one perceives the threat, the more motivated they will be; conversely, no perceived threats causes no motivation to evaluate the efficacy, ending their attention to the message. When there is sufficient perceived threat, individuals appraise the efficacy based on response efficacy and self-efficacy. Hence, individuals evaluate the effectiveness, feasibility, and ease with which a recommended response impedes or averts a threat.

To illustrate this process, let’s examine a message concerning heart disease. The Heart Disease Society advocates: 20 minutes of cardiovascular exercise, three times a week, will reduce heart disease. If the message’s receiver knows she/he is at low-risk for heart diseases and eats healthy, she/he will perceive their susceptibility low. That person will perceive no, or a low, threat, causing no response to the message. If the message’s receiver has a family history of heart disease, she/he will likely view themselves as susceptible. Additionally, they will perceive a high severity, since the disease is fatal, causing a high perceived threat. That person will also have a high perceived efficacy, if they have time to exercise and believe exercise prevents heart disease. Thus, messages need to communicate the threat’s severity and susceptibility to targeted
individuals, and explain the recommended response’s efficacy and the individual’s ability to do the recommendation.

When one faces a high perceived threat and efficacy, they experience the danger control process. The danger control process elicits protection motivations that trigger self-protective changes, which has people think of strategies to avert a treat. The response is adaptive changes in accordance to a message’s recommendations. These include belief, attitude, intention and behavior changes. The danger control process is the preferred processing route for communicators, because message acceptance occurs.

When one faces a high perceived threat and low perceived efficacy, they experience the fear control process; this can also happen when the critical point is passed. The critical point is where perceptions of threat begin to exceed perceptions of efficacy, causing fear control processes to begin dominating over danger control processes. The fear control process elicits defensive motivations that trigger a response to their fear, not the danger. The response is maladaptive changes, such as avoidance, denial and reactance. The danger control process is unwanted processing route for communicators, because message rejection occurs. Hence, messages must ensure they express high levels of self-efficacy and response-efficacy before advocating a heightened perceived threat in individuals, since low perceived efficacy may impede other danger control processing.

**Cognitive-Function Model**

Nabi (1999) proposed the Cognitive-Function Model (CFM) was the first direct attempt to explain “the role of [negative] emotion in the process of persuasion” (p. 292). The model is grounded in past work in functional emotional theories and dual-processing theories – ELM and
HSM. CFM is distinct from EPPM, in that it is designed to describe rational-based decision making, which accounts for negative emotional variables. Though Nabi only published using CFM’s framework for a short period (i.e. 1999, 2002a, 2002b), she triggered a discussion that is aimed to bridge divides between rational and emotional research.

**Figure 1: Diagram of CFM (Nabi, 1999, p. 307)**
The CFM (see Figure 1) posits that if a message contains a core emotional theme, and it is perceived and relevant to the receiver, then an emotional state is evoked. The receiver’s emotional reaction depends on their perception of the emotion’s core relational theme. A core relational theme is the essence of a particular emotion, and is what distinguishes it from other emotions (C. Smith & Lazarus, 1993). Nabi argues, for instance, in order to arouse fear, a message needs to tap into the core relational theme for fear (i.e., create the perception that an individual is being threatened by some kind of imminent danger).

A receivers’ reaction to the emotional content can be divided into two motivational categories – attention and processing. Attention motivation is their desire to engage the message’s content, focus or avoid, of the emotion-inducing stimuli; and processing motivation is their desire “to satisfy the emotion-inducing goal” (Nabi, 2002a, p. 206). High attention motivation increases the receiver’s desire to carefully process the message, since the emotion encourages engaging in the message’s content – emotions with approach tendencies (Nabi, 1999). The contrapositive is true for low attention motivation – emotions with avoidance tendencies. Akin to attention motivation, processing motivation produces a parallel influence pattern; since receivers will process the message more carefully, if they expect the content to help attain the emotion-induced goal. Additionally, Nabi posits the magnitude of receivers’ motivational drives will correspond to the intensity of their emotional experience.

Regardless of their motivated attention or processing – particularly, their agreement with the emotion-induced goal – the receiver next becomes “concerned with whether the remainder of the message will help satisfy the aforementioned goal” (Nabi, 1999, p. 308). Those who believe, or are uncertain, that the remainder of the message will provide reassurance, and contain goal-relevant information, will be motivated to process the upcoming information, which still may be
low or high. For those who do not expect the subsequent information will provide reassurance and goal-relevant information, peripheral route processing will ensue (see above discussion of “Elaboration Likelihood Model;” i.e. Petty & Cacioppo, 1986).

Reassurance message cues adjoined with avoidance emotions will be convinced of the negative effects without more thorough processing, causing low motivation and peripheral route processing. Receivers experiencing avoidance emotions may process through the central route, if they believe subsequent information will provide reassurance that is not readily available through heuristics. Those experiencing approach emotions, Nabi argues, are highly motivated to engage the rest of the message, regardless of reassurance cues, as long as they believe goal-relevant is forthcoming. Hence, central route processing will ensue for these individuals.

After publishing the apex of her Doctoral work, Nabi’s first publish study testing CFM raised apprehension. Nabi (2002a, p. 214) “call[ed] for caution in accepting the CFM in its current form,” because the interaction between emotion type – approach and avoidance based emotions – and level of reassurance on processing depth did not appear. The study did support other tenants of CFM: an approach emotion, anger, did generate more argument-relevant thoughts than avoidance emotion, fear; and only emotion groups, not the control group, were affected by reassurance cues. Nabi (2002a, p. 214) concludes, “In sum, this first test of the CFM was supportive of its basic components – motivated attention, motivated processing, and expectation of message reassurance, even though the exact relationships may not be captured properly at present.” She ends by calling for scholars to revise the model, endeavors akin to this capstone.
Emotional Response Models Extrapolations

Extended Parallel Processing Model
- Emotion inducing messages that cause dissonance can cause adaptive change, if the message conveys a response that quells the triggered dissonance.
- Emotion inducing messages that cause dissonance can cause maladaptive change, if the message does not convey or conveys inadequately a response intended to quell the triggered dissonance.
- A person evaluates a message’s suggested response to the induced dissonance by appraising the efficacy of the response (response efficacy) and their ability to accomplish it (self efficacy).

Cognitive-Function Model
- If a message has a core relational theme, an emotional experience is induced.
- Emotional reactions influence motivation to process subsequent portions of the message.
- Approach-based emotions tend to elicit more argument-relevant scrutiny.
- Reassurance that message’s recommendation(s) will achieve the emotion-induced goal, causes more effortful scrutiny of subsequent information.

Emotion Theories

Biology of Emotions

Neuroscience lends weight to the notion of two routes to emotional processing, as emotional processing and the conscious emotional experience occur in different portions of the brain. The amygdale is now known to not generate the conscious emotional experience; rather, it receives environmental cues and adjusts subsequent responses. For example, Paton and colleagues (2006) found that monkey’s amygdale neurons adjusted, corresponding to the negative or positive feedback, in manner that could predict learning with respect to feedback.
Moreover, the amygdale responds to subliminal stimuli like the whites of people’s eyes (Whalen et al. 1998)\(^4\) and general eye gaze (Adams, Gordon, Baird, Ambady, & Kleck, 2003). In sum, amygdale activity corresponds to environmental cues, with or without awareness, and can predict subsequent behavior (Baumeister, Vohs, DeWall, & Zhang, 2007). Hence, the amygdale is akin to a 911 emergency operator – it receives the stimuli and can trigger automated responses if necessary, but can also guide and inform subsequent actions if a response is not as pressing.

Feelings, or emotional experiences, are created in the insular cortex, which is connected to the amygdale (Ibid.). For example, the insular cortex activity corresponds to one’s awareness of threat (Critchley, et al., 2000). Though the insular cortex can be affected by the amygdale, it functions independently. Anderson and Phelps (2002) illustrate that people with damaged amygdales still experience emotional states, with no noticeable difference. Most pertinently, it is the insular cortex that becomes activated when people are asked to cognate over their emotional experience (Damasio, et al., 2000). Thus, the amygdale generates automatic responses and the insular cortex generates a conscious or perceivable response.

Back to our 911 analogy, the amygdale (911 operator) may believe you should be fearful but insist it is not an emergency. The insular cortex receives this information, and transmits it to your consciousness through a feeling of moderate fear. In contrast, if the amygdale (911 operator) believes an immediate response is necessary, it immediately sends emergency help, and may trigger the famed fight or flight response, without the insular cortex’s involvement.

**Forming Emotions**

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\(^4\) Subjects were shown pictures of masked, and were unaware of the expressive target face.
An emotional experience is perceived relative to individual’s previous affective residue, which is akin to a specific situational emotional schema (Baumeister, et al., 2007). Baumeister and colleagues introduced the notion of an affective residue, borrowing heavily from Russel’s (2003) and Gollwitzer’s (1999) reasoning, which is implicitly based on Lazarus’s (1991, 1993) work regarding appraisal. I will recite and add to their argument, as it is valid; and more direct evidence will be noted in subsequent sections, illustrating the affective residue’s effects. The crux of Baumeister’s and colleagues (2007, p. 172) argument is:

“Conscious emotion commands attention and stimulates analysis, learning, and adaptation, often occurring in the aftermath of behavior and its outcomes… Automatic affective responses can preserve the lessons and information from previous emotional experiences. The combination of previous emotional outcomes and current affect also contributes to making people start anticipating emotional outcomes – and to choose their actions according to the emotions they expect will ensue.”

People create their affective residues from their conscious emotional states, which are used to guide subsequent similar occurrences. The affective residue acts as a feedback mechanism, allowing the perceived optimal outcomes with the least amount of cognitive effort.

Hence, the name affective residue – the remaining results from previous emotional states. Previous emotions are cognitively analyzed causing lessons to be extracted, forming heuristics for future behavior, which shapes their affective residue as well.5

For instance, a person watches a friend experience an embarrassing event. The person proceeds to laugh at their friend, which causes the friend more distress. The heightened level of distress causes that person to feel guilty, prompting them to be regretful of their actions. Even if they did not consider their actions for a prolonged period of time, regret signals that some evaluation took place (Ibid.). This regret guides similar events in the future, maybe causing

5 Note, since the affective residue is object-specific, it encompasses the common notion of emotional awareness. Someone with low emotional awareness would have less quantity and developed affective residues.
hesitation or a discontinuation of similar actions, relative to the utility they gained from laughing at their friend. Now, if the friend laughed the embarrassing event off with the person, the person would not feel guilty and likely repeat their actions in future similar situations. Note, this is not a true conditioned response; it is a response guided by their affective residue’s interpretation of the emotional experience, informed from past experiences.

The affective residue is a less abstract view of Russell’s (2003) “attributed affect” and “affect regulation,” both of which are intertwined with his “core affect.” The core affect is the consciously accessible neuropsychological state that is object-free; and it is an “integral blend of hedonic (pleasure – pain) and arousal (sleepy – activated) values” (Russell 2003, p. 147). Think of hedonic and arousal as the primary colors, except for emotions and that they are polar continuums. Here, one’s general emotional disposition is primitively formed and molded. The attributed affect is when the core affect becomes attributed to a specific object or event – a distinct affective residue. Affect regulation is when one alters, or attempts to alter, the core affect. While affective residue regulation is object-specific not object-free, the break from Russell’s reasoning is justified, as a person can alter their disposition towards a specific occurrence without changing their overall disposition. Other than that minor divergence, the affective residue is consistent with Russell’s conjectures, as all guilt had to trigger – in the aforementioned example – is a “bad idea” signal (Baumeister, et al., 2007).

A clear example of how an affective residue can differ between people and groups, even if the triggering situation is analogous, is love. Love is comprised of three primary components: intimacy, passion and decision/commitment (Sternberg, 1986). The type of love a person feels depends on the strength of each of these components, which is in turn shaped by their life experiences. Generally, women are more likely to endorse a concept of love that distinguishes
between love and sex (Janus & Janus, 1993). Seemingly, genderfication⁶ makes women more accepting of love without sex, forming a distinctive affective residue trend apart from men. Consequently, lesbian couples have lower rates of sex than all other types of couples (Blumstein & Schwarz, 1983); however, their low sex rate is not dispositive on their degree of love. Love illustrates how the residue from past emotional experience informs subsequent analogous experiences, allowing people to experience the same emotion but draw different conclusions and reactions.

Though the notion of an affective residue may be a novel encompassing idea in the realm of emotional processing, similar ideas are implicitly suggested throughout the literature. Both accepted cognitive dual-processing models – ELM and HSM both tout heuristic processing influenced by relevant-schema (Petty & Cacioppo, 1984; Chaiken, 1987). The affective residue conforms to this prescribed reasoning, but also broadens the scope of influence past a mere heuristic, informing whether a person wants to maintain or change their emotional state – the affective residue shapes decision rules to achieve a specific goal (Baumeister, et al., 2007). However, the affective residue departs from ELM’s and HSM’s reasoning with regards to accessing relevant-schema. The dual-process theories posit that heuristic processing accesses relevant-schema that is less germane than when individuals engage in more thorough scrutiny. The affective residue, in contrast, is object-specific, make it germane to the stimuli as long as it has been developed – i.e. cultivated through similar experiences over time.

Gollwitzwer (1999) identifies the processing and reasoning of the affective residue. When confronted with the need to take action, people do not always deliberate their options; rather, “they may strategically call on automatic processes in an attempt to secure goal

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⁶ To Professor Feldman: Genderfication is a word. It is used heavily in gender studies.
attainment” (Ibid., p. 493). The automatic process helps translate their goals into actions, as there are functional barriers for attainment – distraction, activation and habits to name a couple. Take the example of an embarrassing incident, mentioned above. If the person who felt guilty is confronted with a comparable situation in the future, they would not take a timeout to elaborately scrutinize their response – to laugh again or show sympathy. Instead, a goal-intention would be identified based on past experiences, and specific strategies would be employed to attain the goal – implementation-intention. In our example, the person may wish to comfort – goal-intention – their friend by demonstrating sympathy – implantation-intention. The reaction acts as a “feedback in action control” (Baumeister, et al., 2007, p. 173) from previous occurrences.

Theorists identify heuristics or if-then processes, which at times seem similar, because they all identify an overarching process of the human brain – people are pattern-orientated processors (De Bono, 1970). The fact that people dominantly use vertical, or pattern orientated, logic is well-founded; though, there is a debate whether our heavy use of vertical logic was formed through biological traits or social learning (Grissom 2004). The first time a child sees fire, they may feel excitement or bewilderment over the foreign aesthetically pleasing flames. However, once they touch it, or their parents yell at them for getting to close, a pain or fear is associated with it. If not initially, they eventually learn not to touch any fire, as that action is categorized with negative emotions. The affective residue, or any other notion of biases or schemas, is just simple pattern recognition of one’s experiences, allowing for categorization and easy recall.

**Functional Emotional Theories**

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7 The person may hesitate or freeze, but those are emotional responses, which will be explained in subsequent sections.
Nabi (2003) examines framing issues within the theoretical context of functional emotion theory. The basic premise of this theory is that emotions result from evaluative appraisals made relative to personal well-being, which create subjective states of valenced “action readiness.” These states provide feedback with cognitions, physiological changes and perceptions to create action tendencies and, ultimately, behaviors (Nabi, 2003; Izard, 1977; Lazarus, 1991; Plutchik, 1980). Nabi sees the notion of emotions as frames as implicit in functional emotion theories, which believe that emotions have an evolutionary purpose.

Intensity of emotion is important to functional emotion theories, because intensity is related to motivation and affective posture (Nabi, 2003). Ortony and colleagues see emotional intensity as moderated by three “central intensity variables,” within each of the emotional classes: “A person’s appraisal of an emotion-inducing situation is based on three central variables: desirability, praiseworthiness, and appealingness, which apply to Event-based emotions, Agent-based emotions and Object-based emotions, respectively” (Ortony, Clore, & Collins, 1988, p. 58). They further conceive of these three variables being respectively evaluated in terms of goals, standards and appealingness – i.e., we determine how praiseworthy an actor is in relation to sets of normative standards, set forth by our community. Thus, the intensity of one’s reproach (i.e., dislike vs. hatred) toward another is based on the degree to which particular normative standards are violated, when particular actions are taken.

The above discussion has focused on the types of appraisals that tend to elicit emotions, rather than the type of behavior that people exhibit when they are in the emotional state itself. This is, as Roseman and colleagues (1990, p. 903) notes, an important distinction because “one’s thoughts during an emotion experience may be quite different from the thoughts that caused the emotion.” Here is where Nabi’s (2003) research on framing specifically contributes to the
discourse. She posits that emotions act as frames, causing people to desire or discount particular types of information relative to particular emotional states.

**Emotion Theories Extrapolations**

*Biological of Emotions*
- Emotional stimuli can trigger automatic responses, and emotional experiences that guide responses.

*Forming Emotions*
- An emotion is perceived and evaluated relative to similar emotional experiences and social contexts, which helps guide their present experience and reaction.
- Emotions are object-specific and relative to a person’s intrinsic hedonic and arousal preferences.
- An affective residue is an object-specific schema, associated with similar experiences and situations, used to achieve an emotion-induced goal.
- An affective residue is evaluated and may be altered after it is triggered or used.

*Function Emotion Theories*
- Emotions result from evaluative appraisals made relative to personal well-being
- Emotions provide feedback with cognitions, creating subjective states of action readiness.
- The source – event, agent or object – of an emotion’s core relational theme affects its intensity.
- Emotional intensity is guided by a person’s appraisal of the desirability, praiseworthiness, and appealingness of the emotional experience.
Arguments for Emotional-Cognitive Models

Argument 1: Emotional-cognitive models should be dual-processing.

One problem with theories of emotional processing is that emotional phenomena do not always follow a similar pattern, causing a trend to develop theories for specific emotions (i.e. Witte, 1992) or settings (i.e. Leventhal, Brissette, & Leventhal, 2003, Katz, 1960). Nevertheless, an overarching trend within the literature, which Baumeister and colleagues (2007) recognized, is that there are two broad categories for emotional processing – automatic and controlled. Notably, to not confuse, I will use the term *extended* instead of *controlled*, as automatic responses have a aspect of control, which I argue later, and “extended” better reflects the processing that occurs. Such approaches have been useful in the past, as dual-processing theories have been able to integrate and advance discourse for other communicative phenomena (Chaiken & Trope, 1999).

The causal link between emotions and behaviors is heavily contested in the literature. Loewenstein and colleagues assert, “The idea that emotions exert a direct and powerful influence on behavior receives simple ample support in psychological literature on emotions” (Loewenstein, Weber, Hsee, & Welch, 2001, p. 272). While evidence proffered illustrated a powerful influence, evidence supporting a direct causal link was “neither extensive nor convincing” (Baumeister, et al., 2007, p. 171). In contrast, scholars arguing against a causal link support the stance of Schwarz and Core, who previously stated, “Most of the research has focused on the influence of feelings on cognitive processing. Attention to the impact of feelings on behavior has been more limited” (Schwarz & Clore, 1996, p. 458). But now, while they still
believe causal evidence is lacking, they conclude, “The immediate effects of emotion… are more mental than behavioral” (Schwarz & Clore, 2007, p. 39, in Baumeister, et al., 2007, p. 176). The divide is apparent but, however, not unexplainable, as evidence points to two distinct trends in processing – automatic and extended.

This argument is not novel. Ekman (1977) long ago proposed the notion of two distinct appraisal mechanisms, one automatic and the other “extended” consciousness:

“There must be an appraiser mechanism which selectively attends to those stimuli (external or internal) which are the occasion for… [one or another emotion]. Since the interval between stimulus and emotional response is sometimes extraordinarily short, the appraisal mechanism must be capable of operating with great speed. Often the appraisal is not only quick but it happens without awareness, so I must postulate that the appraisal mechanism is able to operate automatically. It must be constructed so that it quickly attends to some stimuli, determining not only that they pertain to emotion, but to which emotion…. Appraisal is not always automatic. Sometimes the evaluation of what is happening is slow, deliberate and conscious. With such a more extended appraisal there may be some autonomic arousal, but perhaps not of a kind which is differentiated. The person could be said to be aroused or alerted, but no specific emotion is operative. Cognition plays the important role in determining what will transpire. During such extended appraisal the evaluation may match to the selective filters of the automatic appraiser…. It need not be, however; the experience may be diffuse rather than specific to one emotion” (p. 58-59).

Ekman posits a dual-processing mechanism that accounts for social psychological literature’s divergence well before it widened; and his assertions now appear to accurately reflect the current status of emotional research

Theorists believe emotions can cause automatic responses, and that cognitions can become entwined with emotions. Zajonc (2000), for instance, illustrates that emotions can cause attitudinal change unconsciously, without any elaboration or scrutiny. Although Zajonc argues that emotions and reasons are independent, others acknowledge that the two can function alongside one another, affecting each other. While their distinguishing characteristic of emotional “complexity” (ex. Winkielman, Berridge, & Wilbarger, 2005; Baumeister et al. 2007)
is an inaccurate distinction, as its subjective and currently lacks a defense more than mere assertion, their acknowledgement of two distinct processing routes is. Emotions can also affect one’s cognitive processing, biasing it (i.e. Clore, 1994; DeSteno, Petty, Rucker, Wegener, & Braverman, 2004). Here, the view is emotional states not only provide evolutionary, or adaptive, responses, but there are also “distinct situational appraisals through modifications of mental processing, motivations, and physiology” (DeSteno, et al., 2004, p. 43). The reasons for these two sub-processing routes, and the accurate distinguishing variable, will be explained in the subsequent arguments; however for now, the critical point is that there are two types of processing for emotions.

Additionally, Neuroscience lends weight to the notion of two routes to emotional processing, as emotional processing and the conscious emotional experience occur in different portions of the brain. The amygdale is now known to not provide an emotional feeling state; rather, it receives environmental cues and adjusts subsequent responses. For example, Paton and colleagues found that monkey’s amygdale neurons adjusted, corresponding to the negative or positive feedback, in manner that could predict learning with respect to feedback (Paton, Belova, Morrison, & Salzman, 2006). Moreover, the amygdale responds to subliminal stimuli like the whites of people’s eyes⁸ (Whalen, et al., 1998) and general eye gaze (Adams, et al., 2003). Hence, amygdale activity corresponds to environmental cues, with or without awareness, and can predict subsequent behavior (Baumeister, et al., 2007).

Feelings, or emotional experiences, are created in the insular cortex, which is connected to the amygdale. For example, the insular cortex activity corresponds to one’s awareness of threat (Critchley, et al., 2000). Though the insular cortex can be affected by the amygdale, it

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⁸ Subjects were shown pictures of masked, and were unaware of the expressive target face.
functions independently. Anderson and Phelps (2002) illustrate that people with damaged amygdales still experience emotional states, with no noticeable difference. Most pertinently, it is the insular cortex that becomes activated when people are asked to cognate over their emotional experience (Damasio, et al., 2000). Thus, the amygdale generates automatic responses and the insular cortex generates more deliberative responses, which may or may not be influenced by the amygdale.

**Argument 2: One emotional-cognitive processing route is automatic, which is triggered if an individual does not have the opportunity to cognate over the stimulus.**

An automatic emotional-processing route is well established and documented in the literature. An automatic response to a stimulus, such as a predator, could occur in a tenth of a second, almost instantaneous to its recognition (N. Smith, Cacioppo, Larsen, & Chartrand, 2003). Such a quick response time is necessary to avert many dangers. For instance, women with physically violent partners often head off incipient abusive rages by initiating sex (DeMaris, 1997). Baumeister and colleagues argue that this example demonstrates that “anger evolved to reduce aggression” (Baumeister, et al., 2007, p. 176). While they correctly identify that anger signals the possibility of future aggression, they misinterpret the significance of this evidence, concluding that there is no causal link between anger and aggression. Baumeister’s and colleagues’ ill-formed conclusion rests on their undue focus on the abused women’s action, rather than the violent partner. The women instigate sex because they believe the anger cues predict imminent abuse (DeMaris, 1997). If sex was not instigated, the women believe – based on past events – physical violence would ensue, which contradicts Baumeister’s and colleagues’ (2007) extrapolations from this study. Moreover, when faced with anger cues, the women appear to initiate sex reflexively. A reflexive action makes sense, and is best for self-
preservation, as prolonged evaluation of possible responses would likely be futile, since her partner’s anger would already have transformed into aggression. DeMaris’ (1997) study illustrates the need for an automatic processing route – women identified anger cues from their partners, and based their actions on previous relatively successful experiences (affective residue); their reactions were an automatic response since time constraints prohibited an opportunity to cognate, and immediate action was necessary to thwart pressing danger.

Imminent danger is not a prerequisite for the automatic processing, as it can also be triggered by a lack in one’s capacity to fully appreciate their emotional experience, eliminating an opportunity to processing the emotion. The majority of the evidence demonstrating a link between competition and aggression uses children (i.e. Hanratty, O’Neal, & Sulzer, 1972; Parker & Rogers, 1981; Nelson, Gelfand, & Hartmann, 1969). Nelson and colleagues (1969) illustrate the general essence of these studies, providing evidence that competition can produce hostility. In the study, children from ages 5 to 6 played either competitively – winning or losing contests – or noncompetitively; and then they were allowed to play with all the toys alone. The boys who lost in previous competition were most aggressive when playing alone; those who won were moderately aggressive; and children that played noncompetitively were least aggressive. Notably, boys who won had no need to alleviate frustration, yet they still exhibited a heightened state of aggression. I suggest that when those boys were placed in an identical playroom as their competitive games, their underdeveloped or absent object-specific affective residue guided them to act aggressively – they were forced to utilize an object-relevant affective residue, not specific. Competition is a constructive form of aggression, and their young age lacked the capacity to differentiate between competitive aggression and hostile aggression.
Furthermore, studies that demonstrate that frustration need not lead to aggression typically use subjects that have the capacity to grasp their emotional states – adults (i.e. Bandura, 1973; Baron, 1977; Zillmann, 1979). In general, the lack of a causal relationship is attributed to acknowledgement of social norms and prior experience (Berkowitz, 1989), or in other terms the affective residue. The significant distinction here is that when provided an opportunity to cognate, people’s responses are emotionally charged but not reflexive or automatic.

Additionally, subliminal priming evidence lends credence to the notion that people can process emotions automatically. Kunst-Wilson and Zajonc (1980) confirmed an increased liking for stimuli that had earlier been presented subliminally to participants. Subsequently, Murphy and Zajonc (1993) showed happy and angry faces to subjects subliminally, which influenced subsequent likeability judgments. These valence reactions suggest that people can be influenced by factors beyond their awareness. Though Zajonc (2000) concludes that these attributes “close the debate over the independence of affect,” as that is his paper’s title, it is more illustrative of people’s emotional processing when they lack opportunity to cognate over their experience – subliminal priming implicitly excludes the possibility and capacity to cognate.

Reflexive responses are also prevalent when people lack motivation to cognate over their emotional state. Bargh and colleagues extended Fazio’s (et al. 1986) work on the “automatic attitude” priming effect (Bargh, Chaiken, Govender, & Pratto, 1992). The study had subjects quickly interpret stimuli as good or bad, with one group instructed to hold an attitude object prime word in their memory. The two groups’ results did not provide a significant difference, causing them to conclude, “automatic activation effect is a function not of variations in accessibility of the individual subjects’ attitude towards the object but of features of the object representation” (Bargh, et al., 1992, p. 906). However, the group that received the priming word
did not have an opportunity to consciously cognate over the attitude-object prime; hence, both groups processed automatically. In contrast, when people have the opportunity and highly motivated to cognate over their emotional state emotional priming causes distinct results (Briñol, Petty, & Barden, 2007).

**Argument 3: One emotional-cognitive processing route is extended, which is influenced by mood regulation.**

Isen (1987) identifies the theoretical problem when dealing with emotional processes. While his arguments are in the context of negative emotions, they are just as applicable to positive. He recognizes that negative emotions either cause or are the product of dissonant cognitive states. Isen notes it is generally impossible to discern whether evidence proffered as a causal link, between an emotion and behavior, is demonstrative. The problem arises from theorists’ inability to establish that the emotion caused the behavior, rather than the person’s attempt to remedy their emotional state. In the example of women’s sex defense mechanism to thwart abuse, their fear might not trigger the mechanism, but instead the mechanism may be triggered to help quell their fears. While this may seem a mere semantic difference to some, it is significant to understanding the process.

Thus, emotional-cognitive models should not provide a direct causal link between the emotional experience and intended action. Cialdini and colleagues proposed that behaviors are performed to achieve a sought emotional consequence (Cialdini, Darby, & Vincent, 1973), akin to Isen’s (1987) notion of emotional management. The “mood freeze” manipulation was developed to test this hypothesis (Manucia, Baumann, & Cialdini, 1984). The manipulation gives subjects in one condition a placebo, telling them that it will cause their emotional state to stay constant for around an hour. This hinders subjects’ emotional regulation, ceasing behaviors
to alter one’s mood, because subjects believe such regulation is futile. Hence, if emotions cause deliberate behavior, that behavior should still exist, or even intensify, under the “mood freeze” manipulation (Baumeister, et al., 2007). In contrast, if the management of emotion causes the behavior, that behavior should cease to exist, under this manipulation.

Manucia and colleagues (1984) tested the well-established finding that guilt causes helping (C Cunningham, Steinberg, & Grev, 1980). The typical findings were replicated in the uncontrolled group; however, the effect was absent when the mood freeze manipulation was present (Manucia, et al., 1984). In fact, mood freeze caused the participants feeling guilt to be the least helpful, which is the polar opposite result from when people can regulate their mood. Hence, helping is can be caused by one’s desire to alter their mood, as it is a more pleasant feeling than guilt – evidence of mood regulation, rather than direct causation.

The mood freeze manipulation has established mounting evidence that emotional regulation is the cause of individuals’ ultimate actions. Previously, the notion that sadness triggered an increase in eating unhealthy foods was well accepted; but now, a mood freeze manipulation, by simply informing participants that eating would not alter their mood, caused the relationship between sadness and eating to cease (Tice, Bratslavsky, & Baumeister, 2001). Additionally, the same study discredited the causal relationship between bad moods and procrastination (i.e. Ferrari & Scher, 2000), through simple mood freezing. Moreover, Bushman and colleagues demonstrated that aggression’s relationship to anger is to diminish it (Bushman, Baumeister, & Phillips, 2001). The study angered people through insult and provided individuals an opportunity to cognate over their experience. The experiment found no aggression in the mood freeze control group; the other group only saw an increase in aggression, if the subjects believed it would alleviate their anger.
The stipulation that emotion regulation causes attitude or behavior change is consistent with the well established CDT (Festinger, 1957). As discussed in the literature review, CDT argues people engage in dissonance reduction by seeking consistency between one’s beliefs, actions and feelings – in essence one desires an overall cognitive state of perceived harmony. Mood regulation is a mere application of CDT to emotional-cognitive processing, asserting emotions alter individuals’ harmonious cognitive state; and they try to bolster or restore that harmony.

**Argument 4: When a consonant emotional experience is triggered and processed through the extended route, an emotional maintenance bias occurs.**

When a person deliberates in a consonant state, they attempt to maintain that state, causing a bias in their processing. This postulate borrows a primary assertion of ATF and CDT – different stimuli are need to effectively persuade different types of attitudes (Katz, 1960; Festinger, 1957). People shape their attitudes and behaviors by focusing on information that is most relevant to their goals (Katz, 1960). They can either wish to achieve desirable states – promotion focus – or avoid undesirable states – prevention focus. If the stimulus matches their goal, they are more likely to adhere to the stimulus’ recommendations to maintain their consonant state. Notably, I use the term *consonance* instead of *positive*, because a positive emotional experience is subjective and negative feelings can be consonant. For instance, a fear appeal concerning smoking may reinforce a non-smoker’s fear of the activity (consonance), while also causing displeasure for smokers (dissonance).

Functional matching biases individuals’ processing in favor of accepting the appeal (Lavine & Snyder, 1996). In the above smoking example, the non-smoker wants to believe their previous beliefs are well founded, and is motivated to maintain that state. However, functional
matching not only causes a bias, but it also causes more thorough scrutiny of a stimulus. Petty and Wegener (1998) identified that functional matching of messages to attitudes cause increased awareness of an argument’s strength. Thus, when people were afforded an opportunity to cognate, they paid great attention to messages that matched their emotional state, maintaining consonance.

A subsequent study confirmed this emotional matching bias (DeSteno, et al., 2004). Here, when subjects experienced sadness, they were most receptive to sad messages, as opposed to other emotionally framed messages. Notably, the elicited sadness matched subjects expected, or typical, reaction to the given loaded messages. In contrast, people in a neutral emotional state did not differentiate the messages’ influence, based on its emotional frame. Firstly, the study is evidence of emotional reasoning processing that is distinct from traditional reason orientated processing. Secondly, it illustrates the notion that consonant states exist even when negative emotions are felt. The emotion matching, and subsequent maintenance, bias acts as a form of self-validation, so as to reaffirm the legitimacy of their emotional experience.

A recent experiment concerning pride fully illustrates the emotional maintenance bias, during consonant extended processing. The study had subjects guesstimate the amount of red dots in an image – a time constraint made accurate counting impossible (Williams & DeSteno, 2008). After the individual stated their guesstimation, feedback was given that was said to predict their achievement in the next task, which was hedonically negative. One group’s feedback elicited pride, by providing positive feedback without stating specific results. The pride caused greater perseverance through the negative task, compared to subjects whose pride was not triggered. Here, the individuals who experienced pride took satisfaction from the feeling, and attempted to maintain it by putting the same effort into the following task, even
though the task was designed to thwart effort – the pride group was deemed to work “harder” relative to the control group, as the control group’s effort dropped relative to the first task.

Barden and Petty (2008) provide further evidence of the emotional maintenance bias. Individuals listened to arguments and proffered thoughts concerning the reasoning. Afterwards, subjects were told that they either had a lot or a few thoughts relative to their peers. Though the study does not characterize the type of emotional state such feedback triggered, the authors implicitly acknowledge that confidence levels were manipulated. Those who received the many thoughts feedback perceived they had more cognitive processing, leading to greater attitude certainty and higher behavioral intentions. Accordingly, a confident state is maintained throughout subsequent decisions and actions, preserving that confidence, although no further confidence feedback was provided.

Argument 5: When a dissonant emotional experience is triggered and processed through the extended route, efficacy determines individuals’ reactions.

Emotions can cause cognitive dissonance, which people seek to change, either by eliminating the cause of the displeasure or altering their attitude or behavior. This argument borrows primarily from the EPPM. Notably, while the EPPM highlights fear appeals, I argue fear need not always cause dissonance. Witte (1992) argues that sufficient levels of fear cause adaptive change when efficacy is perceived and maladaptive change when there is insufficient efficacy. This argument uses the same reasoning, except it expands the predictive claims to encompass all emotionally dissonant states.

EPPM argues that the fear control process is triggered in instances of low perceived efficacy, causing a maladaptive response to the fear. White states that the “fear control processes are more automatic and involuntary” (Witte, 1992, p. 340); however, I have already segregated
such reflexive processing into the automatic processing route. Nevertheless, dissonant states in the extended processing route still exist. Additionally, reacting towards an emotion can be due to perceived self efficacy, acting as a regulatory response that rectifies the dissonance. Hence, the I argue defense motivations (i.e. Chaiken, et al., 1996) can influence cognitions, and Witte’s defense and protection motivation can, and often does, incorporate a response towards the object-emotion.

A lack of self or response efficacy does not necessitate automatic processing. For instance, partisans often perceive news media as biased against their position (Vallone, Ross, & Lepper, 1985). Partisans view news media relative to their standpoint; and since news media attempts to present issues neutrally, partisans perceive it as biased because they hold their standpoint as correct. Hearing contradictory notions causes a level of dissonance that they subdue through selective attention, retention, perception and exposure (Festinger, 1957), which helps form their eventual conclusion of a biased media (Vallone, et al., 1985). Now, while dissonant reduction techniques are often unconscious – guided by the affective residue – their analysis of the news media involves conscious scrutiny. Their schema of partisan-relevant emotions guides their elaboration. Furthermore, the outcome is maladaptive, as they are employing a degree of reactance or denial.

Moreover, the partisan example illustrates how one can be self-efficacious at quelling their dissonance without causing adaptive change. Thoughts one perceives as convincing do not cause attitude change; rather, it must also be perceived as valid to cause adaptive change (Petty, Briñol, & Tormala, 2002). Hence, efficacy influences validity, but it not the sole determining factor. Confidence is the primary factor in self-validity, which is primarily influenced by self and response efficacy (Petty & Briñol, 2008).
Moons and Mackie (2007) provide evidence for message rejection, caused by low self-validation triggering reactance. Here, subjects were induced into a state of anger, as their life goals were criticized. Angered people were found to have heightened levels of scrutiny towards subsequent arguments, discerning strong ones from weak ones more easily. Angered participants were motivated to protect their life goals, which are well formed attitudes, likely transitioning their anger to higher scrutiny towards the logic experimenters proffered. They rejected attacks towards their life goals; but, the subsequent cognitive scrutiny was more discerning, as stronger evidence towards a beneficial outcome was identified and appreciated. The subsequent evaluations operated in a consonant state, since it was cognitively harmonious to feel anger towards the attacks. Here, they became motivated to attack and criticize the logic they believed originated from the experimenters.
Summary of Key Extrapolations from Literature Review

Cognitive Response Models

Cognitive Dissonance Theory
• People want to resolve dissonance states, as it is unpleasant.
• People attempt to maintain consonance through selectivity.

Theory of Reasoned Action
• People’s behavioral intention or sought goal, which is based on their attitudes and perceived norms, is an accurate predictor of their ultimate behavior.

Attitude-Function Theory
• Attitudes can summarize previous knowledge, allowing individuals to make decisions without conscious elaboration.
• Attitudes can express a person’s values, communicating personal information to others.
• Attitudes can serve to safeguard their emotional wellbeing.
• Attitudes can guide people to more optimal outcomes.

Cognitive Dual-Processing Models

Elaboration Likelihood Model
• People are motivated to make “correct” decisions, but are restricted due to limited cognitive resources.
• If a person is motivated and able to process a message, they will engage in more effortful scrutiny called central route processing.
• Effortful scrutiny, central route processing, causes more enduring, lasting and congruent attitude change.
• If a person lacks either motivation or ability to process a message, they will heavily rely on heuristics, which is called peripheral route processing.
• Heuristic processing does not cause attitude change.
• Both routes of processing are often used simultaneously.
Heuristic-Systematic Model

- People will scrutinize a message until their actual confidence meets their desired confidence.
- There are different types of motivations that drive message processing – accuracy, defense and impression.

Emotional Response Models

Extended Parallel Processing Model

- Emotion inducing messages that cause dissonance can cause adaptive change, if the message conveys a response that quells the triggered dissonance.
- Emotion inducing messages that cause dissonance can cause maladaptive change, if the message does not convey or conveys inadequately a response intended to quell the triggered dissonance.
- A person evaluates a message’s suggested response to the induced dissonance by appraising the efficacy of the response (response efficacy) and their ability to accomplish it (self efficacy).

Cognitive-Function Model

- If a message has a core relational theme, an emotional experience is induced.
- Emotional reactions influence motivation to process subsequent portions of the message.
- Approach-based emotions tend to elicit more argument-relevant scrutiny.
- Reassurance that message’s recommendation(s) will achieve the emotion-induced goal, causes more effortful scrutiny of subsequent information.

Emotion Theories

Biology of Emotions

- Emotional stimuli can trigger automatic responses, and emotional experiences that guide responses.

Forming Emotions
• An emotion is perceived and evaluated relative to similar emotional experiences and social contexts, which helps guide their present experience and reaction.
• Emotions are object-specific and relative to a person’s intrinsic hedonic and arousal preferences.
• An affective residue is an object-specific schema, associated with similar experiences and situations, used to achieve an emotion-induced goal.
• An affective residue is evaluated and may be altered after it is triggered or used.

Function Emotion Theories
• Emotions result from evaluative appraisals made relative to personal well-being.
• Emotions provide feedback with cognitions, creating subjective states of action readiness.
• The source – event, agent or object – of an emotion’s core relational theme affects its intensity.
• Emotional intensity is guided by a person’s appraisal of the desirability, praiseworthiness, and appealingness of the emotional experience.
A Proposal: The Emotional-Cognitive Processing Model

I propose the current state of emotional and cognitive literature can be integrated into one consistent duel-processing model – what I call the Emotional-Cognitive Processing Model (ECPM). While Baumeister and colleagues (2007) noted the existence of two emotional processing routes, they merely identified it, providing no integrated model of their own. The ECPM, illustrated in Figure 2, is an attempt to integrate the literature, lending credence to previous scholars’ merit, while also deconstructing barriers between them.

A message or stimulus is perceived by an individual; and if it has a core relational theme, the previous object-relevant affective residue is accessed (See Baumeister, et al., 2007). Without a core relational theme, the individual will process in accordance with the ELM and/or HSM postulates – it is not the intention of this paper to evaluate the validity of the competing models. The previous object-relevant affective residue triggers an emotional state in order to guide the individual towards an optimal goal, based on previous experiences. The previous affective residue also influences the individuals’ motivation to cognate and automatic response.

If the individual does not have an opportunity to cognate over their emotional experience, they will process through the automatic control route. The individual may not have an opportunity to cognate, because the situation necessitates an immediate response or they lack the capacity to detect the stimulus. The automatic control route is characterized by a relatively immediate and reflexive reaction – an automatic response (See Zajonc, 2000). Subsequent to their automatic response, they appraise their reaction, forming a subsequent affective residue, which may be accessed in subsequent analogous situations (See Baumeister, et al., 2007).
Figure 2: The Emotional-Cognitive Processing Model
The Emotional-Cognitive Processing Model

Message/Stimuli → Core Relational Theme?
  Yes → ELM/HSM
  No → Previous Affective Residue

Previous Affective Residue → Emotional State

Emotional State → Opportunity to Cognate?
  Yes → Motivated to Cognate?
    • Accuracy
    • Defense
  No → Automatic Response

Motivated to Cognate? → Able to Cognate?
  Yes → Expectation of Reassurance
  No → Central Dominant Processing
    Consonant State
    Dissonant State

Expectation of Reassurance → Peripheral Dominant Processing

Perceived Efficacy
  • Self
  • Response

Fulfill Emotion-Induced Goal?
  Yes → Message Acceptance
  No → Message Rejection

Appraisal

Subsequent Affective Residue
If the individual has an opportunity to cognate over their emotional experience, they will process through the extended control route. In this route, their motivation, ability and expectation of reassurance dictates whether they will centrally or peripherally process the message. These processing routes are described in the ELM (See Petty & Cacioppo, 1986; Petty & Wegener, 1998). If the individual lacks either motivation or ability they will peripherally process they message (See Petty & Cacioppo, 1984; Chaiken, 1987); the contrapositive is true for central dominant processing. Moreover, a motivated individual can experience different motivations, which can alter their goals while processing – they may experience accuracy, impression, and defense motivations (See Chaiken, et al., 1996). Additionally, without reassurance that subsequent information will pertain to the emotion-induced goal, the individual will not engage in an effortful scrutiny of the subsequent information (See Nabi, 2002a).

Central dominant processing is influenced by the individual’s emotional state, and can be characterized by their consonant, dissonant or ambiguous experience. If the message elicits a consonant state, the individual will experience an emotional maintenance bias, which drives them bolster the pleasing stimulus, likely causing message acceptance; note, they will still engage in central processing as characterized by ELM, however it will be heavily biased to favor message acceptance. If the message elicits a dissonant state, the individual will attempt to rectify the displeasing experience. Here, if the message provides a sufficient self and response efficacy to the dissonance-triggering stimulus, the message will be accepted (See Witte, 1992). The message will be rejected if it lacks self or response efficacy, and forms of selectivity will be used to quell the dissonance (See Festinger, 1957).
Peripheral dominant processing is influenced by heuristics perceived as relevant to the emotion-induced goal (See Nabi, 1999). If the heuristics suggest fulfilling the emotion-induced goal, the message will be accepted; and the contrapositive is true for message rejection.

After message acceptance or rejection in the extended control route, individuals appraise the outcome of their decision, which forms a subsequent affective residue, which will be triggered for analogous stimulus and social contexts.
Concluding Remarks

The Emotional-Cognitive Processing Model is in its infancy stage. Though it has already advanced significantly from its predecessor (See Solloway, 2009) it still needs significant testing and obviously needs to be refined. Though this initial step begins to advance emotional discourse, much further work is needed. Not only is further research needed to test its postulates, a more rigorous argument needs to be proffered. This ambitious effort needs more time not only for testing and more organic thought, but also to further elaborate on the current argument proffered – I make arguments in pages, which truly deserve a more thorough defense in order for it to significantly impact the discourse. Namely, I recognize the impact of emotional maintenance bias NEEDS\(^9\) significantly more justification, and rigorous testing, before it will be accepted or considered as a noteworthy assertion.

Nevertheless, this paper begins where Nabi (2002a) left off; and also attempts to integrate a larger body of literature than its predecessors. Such an effort to deconstruct these self-imposed barriers between models and discourses will undoubtedly be arduous and long. Though this paper likely did not sway the majority of readers of ECPM’s exact and intricate processes, I expect it swayed them in favor of some of its fundamental tenets. Rome was not built in a day, much less a semester. With time and further elaboration, I am confident ECPC will eventually create significant waves in the social psychological literature.

\(^9\) All caps intended.
Work Cited


