

# Impact of Priming on Emotional Cognition and Decision-making

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**Abstract.** In recent years, psychological research has increasingly focused on the mechanisms by which unconscious processes influence individuals' thoughts, emotions, and behaviors. Among these mechanisms, priming has emerged as a key area of study, revealing how subtle cues can shape emotional responses and decisions without conscious awareness. This paper explores the profound impact of priming on emotional cognition and decision-making. Emotional priming, achieved through the unconscious processing of stimuli, biases cognitive processes, leading to congruent emotional responses. Studies by Murphy and Zajonc, as well as Wiens and Öhman, illustrate the affective priming effect and the complexity of unconscious emotional processes. For example, priming with positive or negative stimuli can influence individuals' evaluations of neutral faces, making them more likely to perceive these faces as either pleasant or unpleasant. Furthermore, the research delves into the influence of priming on decision-making across various domains, including consumer behavior, where priming with certain words or images can sway purchasing decisions; social judgment, where primed stereotypes can affect how people perceive and interact with others; and ethical perceptions, where moral priming can alter the perceived acceptability of certain actions. The findings underscore the subtle yet powerful role of priming in shaping behavior, emphasizing the importance of ethical considerations in its application, particularly in marketing. The implications of these insights are significant for both theoretical understanding and practical applications in psychology and behavioral science, offering new avenues for research and ethical reflection.

**Keywords:** Priming, unconscious mind, cognitive processes.

## 1. Introduction

Priming is a psychological phenomenon where exposure to a stimulus influences the response to a subsequent stimulus, often without conscious awareness. In the realm of emotional cognition, priming can activate emotional responses that bias subsequent judgments and decisions. The unconscious nature of this process makes it particularly intriguing, as it demonstrates the power of subliminal cues in shaping individual's cognitive and emotional landscape. This paper aims to explore the influence of priming on emotional cognition and decision-making, drawing on key studies that illustrate how subtle, unconscious stimuli can significantly alter behavior. By examining both the cognitive mechanisms and the ethical implications of priming, this research contributes to a deeper understanding of how people's minds are shaped by the environment in ways people may not fully recognize.

## 2. The Influence of Priming on Emotional Cognition

Emotional priming is achieved through unconscious processing of stimuli that activate emotional responses. Murphy and Zajonc demonstrated that subliminally presented emotional stimuli, such as happy or angry faces, significantly influenced participants' judgments of unrelated stimuli, leading them to evaluate these stimuli more positively or negatively depending on the emotion of the subliminal prime [1]. This phenomenon, known as the "affective priming effect," suggests that unconscious emotional stimuli bias cognitive processes toward congruent emotional responses. Wiens and Ohman proposed an information processing model that delineates two unconscious emotional responses: one in which the individual is unaware of the emotional inducer, and the other

in which the individual is unaware of the induced emotion itself [2]. The model highlights the complexity of unconscious emotional processes that can result in emotional responses to unconscious stimuli or the resulting emotional states.

Background masking is a commonly used technique to study unconscious emotional priming. This involves briefly presenting an emotional stimulus that prevents conscious recognition before being masked by another stimulus. Studies using this paradigm have shown that even when participants are unaware of emotional content, their responses are influenced by disguised stimuli, suggesting unconscious processing [3]. The separation of conscious and unconscious emotional priming effects has been demonstrated in various studies. For example, Greenwald et al. found that when participants were subliminally exposed to emotionally charged words (such as "love" or "hate"), their subsequent responses in tasks such as lexical decision-making or word association were biased in ways that aligned with the emotional content of the subliminal prime [4]. This means that participants were faster to recognize or associate words that matched the valence of the subliminal emotional word. In contrast, when participants consciously processed sensory words (such as "bright" or "cold"), their responses were more deliberate and less influenced by the emotional content, leading to different patterns of association or reaction times. For instance, a participant might quickly associate the word "warm" with "sunny" after consciously processing the word "bright," but such a direct and affective bias is less likely than with subliminal emotional words. This dissociation highlights the distinct pathways through which unconscious and conscious emotional guidance passes.

There are several factors that modulate the effectiveness of unconscious emotional priming. These include the duration and intensity of activation stimulation, masking methods, and differences in an individual's sensitivity to emotional stimulation. Klinger et al. employed a reaction window technique in which participants react in a short period of time following the initiation of stimuli [5]. This approach ensures a response based on unconscious processing, as the short window does not allow conscious deliberation. The results of these studies consistently support the existence of unconscious emotional priming effects.

Unconscious emotional priming has profound effects on a variety of cognitive domains, especially attention, memory, and judgment. The Emotional Simon Paradigm used by Houwer involves participants responding to stimuli with congruent or incongruent emotional valence [6]. The results indicate that when the emotional state of the stimulus matches the activation of the stimulus, the reaction time was faster, further demonstrating the impact of unconscious emotional priming on cognitive processes. Emotional stimulation is known to attract more attention than neutral stimulation. Research by Kastner, and Ungerleider found that emotional stimuli were more likely to be noticed and processed, even subconsciously [7]. This heightened focus on emotional stimulation suggests that unconscious emotional stimulation can significantly affect attentional processes. The effects of unconscious emotional stimuli on memory have been shown by studies to be emotionally charged stimuli that enhance memory recall. Windmann and Kutas demonstrated that emotional stimuli could lead to bias in memory recognition processes and that negative stimuli lowered the threshold for recognition of relevant memories [8]. This effect suggests that unconscious emotional activation can alter the encoding and retrieval of emotional memory. Unconscious emotional priming can also affect judgment and decision-making. Murphy and Zajonc found that subliminally presented emotional stimuli of neutral stimuli, while those led by negative emotions were more likely to interpret fuzzy stimuli negatively [9]. This suggests that unconscious emotional activation skews cognitive judgment in favor of stimulating value.

Theoretical explanations for unconscious emotional triggers include sensory information equivalence, emotional preference, and automatic diffusion activation theory. Information equivalence posits that in the absence of information or time, individuals rely on their emotional responses rather than cognitive judgment. Emotional responses are instructive decisions based on prior emotional experiences [10]. Emotional prioritization as proposed by Zajonc suggests that emotional responses occur faster and require fewer cognitive resources than conscious cognitive processes [11]. The primacy of emotional responses ensures that they influence behavior and

cognition even before conscious consciousness [12]. Diffusion activation theory sees emotions as a specific type of memory that can be activated automatically. When emotional patterns are subconsciously activated, they produce unconscious emotional responses that affect subsequent cognitive processes [13].

Recent research has questioned the extent to which unconscious perceptions influence, particularly through emotional priming. Lohse and Overgaard investigated the relationship between perceptual awareness and emotional priming strength and found that levels of perceptual awareness predicted the effects of both positive and negative emotional priming [14]. They reported that the emotional priming effects was only significant when participants had a degree of conscious awareness of the emotional face, challenging the hypothesis that unconscious perception can significantly alter behavior of emotional priming. This evidence suggests that while subliminal priming may influence initial process of perception and attention, its impact on more complex cognitive tasks may be limited unless there is a degree of awareness.

Understanding the activation of unconscious emotions not only enriches the knowledge of cognitive and emotional processes, but also has practical implications for improving mental health treatment and decision-making strategies. As the field evolves, it is expected to uncover deeper connections between emotion, cognition and behavior, paving the way for innovative approaches in psychological research and practice.

### **3. The Influence of Priming on People's Decision-making**

Priming influences decision-making by activating specific cognitive frameworks that in turn guide behavior. Such mechanisms are particularly important in the context of consumer behavior, as subtle cues can significantly alter purchasing decisions. A study by Keeports explored the impact of priming on consumers' purchasing behavior, particularly on unhealthy foods [15]. The experiment involved exposing participants to different types of stimuli to observe how they affected purchase intentions. The study was conducted in a retail setting, where participants were exposed to varying degrees of advertising-some of which contained positive messages about unhealthy foods, while others did not. The results demonstrated that participants who were guided by positive information about unhealthy food choices exhibited a higher willingness to buy than those in the control group who were not guided at all. Specifically, people who were stimulated by triggers chose more unhealthy snacks, suggesting that triggers effectively influenced their purchasing decisions [15].

The implications of these findings are enormous, particularly in the area of marketing, where advertisements can be used as strategic tools to influence consumer behavior. The study's results highlight the possibility that marketers to use primers to subtly steer consumers to certain products, raising ethical concerns about manipulating consumer choices. Keeports discussed these ethical considerations, noting that while activation can be used to promote positive behaviors, such as healthy eating, it can also be used to encourage the consumption of unhealthy products that can lead to adverse health outcomes [15]. The study's findings underscore the importance of considering the ethical implications of using preconceptions in marketing strategies, especially when the goal is to influence consumer behavior in a way that is not in the best interests of consumers.

The impact of priming extends beyond consumer behavior to other areas of decision-making, including social judgement and ethical perceptions. Herr conducted a groundbreaking study on the effects of triggering social judgments, focusing in particular on how exposure to certain characteristics or stereotypes can affect individuals' evaluations of others [16]. In the study, participants were forewarned of characteristics associated with hostility and then asked to rate a person in a neutral manner. Results showed that those with hostile traits were more likely to perceive neutral behavior as hostile than those without. This finding suggests that even if preconceived information is irrelevant to the current situation, preconceived approaches can lead to biased judgments [16]. This is important for understanding how unconscious biases are formed and how they affect social interactions and decision-making.

Herr's study also emphasizes the role of context in mitigating the effects of priming [16]. Preconceived notions have a stronger impact on social judgment when the context of the judgment was unclear or the information provided was unclear, the study found. In such cases, participants were more likely to rely on the primed information to make judgements on hostility of a target person, suggesting that pre-prepared information was more effective in the absence of clear or specific information from individuals. The findings suggest that preconceived thinking has a particular influence on decision-making in situations of uncertainty or ambiguity, when individuals are more likely to rely on cognitive shortcuts to make decisions.

Mograbi et al. further expanded on the role of priming decision-making and explored its implications for moral and ethical judgment [17]. The study aims to examine how moral guidance influences individual decisions in ethical dilemmas. Participants were exposed to ethics-related words and scenarios and then asked to make decisions in a series of moral dilemmas. The results revealed that participants with ethical concepts were more likely to make decisions consistent with these ethical principles than those without. For example, participants led by words related to honesty were more likely to choose honest options that reflected the dilemmas presented to them. This effect was particularly evident in dilemmas where ethical choices are not directly apparent, suggesting that priming of procedures helps to put ethical considerations at the forefront of decision-making [17].

The study by Mograbi et al. also examined the persistence of priming effects in ethical decision-making [17]. The researchers found that the preemptive effect on moral decisions was not only immediate but could last for a period of time and influence subsequent decisions. This suggests that preconceptions can have long-term effects on behaviors, particularly in the moral realm, and repeated exposure to them may lead to more consistent ethical behaviors. The study also highlighted the power and importance of primes, noting that stronger and related primes tended to have a more powerful and lasting impact on decision-making. This finding is consistent with previous studies that the effectiveness of priming depends on the relevance and salience of priming stimulation to the task at hand [17].

In addition to the direct effect of primers on behavior, the interplay between different primers and their cumulative effect on decision-making has always been a topic of concern. Keports explores this by comparing the effects of visual and linguistic quality on consumer behavior [15]. The study hypothesized that the use of these two primes led to stronger behavioral changes than if they were used alone. However, the results have been mixed, with some evidence suggesting that combining visual and speech primes improves their effectiveness, while in other cases the combination did not produce significantly stronger results than single primes. This finding suggests that the effectiveness of priming in decision-making may depend on a variety of factors, including the type of prime number, the context in which the prime number is presented, and the individual's predispositions [15]. In addition, the temporal aspects of priming were explored to understand how long the effects of priming can last and how they influence subsequent decisions. Herr stresses that the effects of priming are not always immediate and can last for a long time, affecting decisions long after initial contact. This durability is particularly important in marketing and consumer behavior, where long-term start-up strategies can be used to shape consumer preferences and brand loyalty [16]. The study also highlighted the role of repeated exposure to primes in reinforcing their effects, suggesting that consistent priming could lead to more stable and predictable behavioral outcomes [16].

These findings have important implications for both theoretical and practical applications of startup in decision-making. From a theoretical perspective, these studies help researchers to understand the cognitive mechanisms of triggers and how they affect behavior. They demonstrate that activation leads to behavior by activating specific cognitive frameworks, often in subtle and unconscious ways. This is important for understanding how prejudice is formed and how it affects decision-making in a variety of contexts, including consumer behaviors, social judgement and ethical decision-making.

## 4. Conclusion

The exploration of priming effects on emotional cognition and decision-making reveals the profound impact that unconscious stimuli can have on people's behavior. The studies reviewed highlight the complexity and subtlety of these processes, demonstrating how priming can lead to biased judgments, altered memory recall, and significant shifts in decision-making across various domains. As the understanding of priming deepens, it is essential to consider the ethical implications of its application, particularly in contexts such as marketing, where the potential for manipulation is significant. Future research should continue to explore the boundaries of priming effects, particularly in relation to perceptual awareness and the long-term consequences of repeated exposure to priming stimuli. By doing so, researchers can better understand how to harness the power of priming in ways that are both effective and ethically responsible.

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