

## *Fear and decision-making in narcissistic personality disorder—a link between psychoanalysis and neuroscience*

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*Linking psychoanalytic studies with neuroscience has proven increasingly productive for identifying and understanding personality functioning. This article focuses on pathological narcissism and narcissistic personality disorder (NPD), with the aim of exploring two clinically relevant aspects of narcissistic functioning also recognized in psychoanalysis: fear and decision-making. Evidence from neuroscientific studies of related conditions, such as psychopathy, suggests links between affective and cognitive functioning that can influence the sense of self-agency and narcissistic self-regulation. Attention can play a crucial role in moderating fear and self-regulatory deficits, and the interaction between experience and emotion can be central for decision-making. In this review we will explore fear as a motivating factor in narcissistic personality functioning, and the impact fear may have on decision-making in people with pathological narcissism and NPD. Understanding the processes and neurological underpinnings of fear and decision-making can potentially influence both the diagnosis and treatment of NPD.*

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### Introduction

**N**arcissistic personality disorder (NPD) has its roots in nearly a century of psychoanalytic studies. Kernberg's<sup>1,2</sup> and Kohut's<sup>3,4</sup> groundbreaking efforts to organize psychoanalytic theory and clinical studies into comprehensive descriptions and treatment strategies moved NPD towards recognition as a separate personality disorder. In the *Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV*,<sup>5,6</sup> NPD has been characterized as a pervasive pattern of grandiosity, need for admiration, and lack of empathy, with interpersonal entitlement, exploitativeness, arrogance, and envy. Other notable phenotypic characteristics include interpersonal distancing and avoidance, insecurity and vulnerability, hypersensitivity, aggressivity, and proneness to shame.<sup>7-9</sup>

The transformation of NPD into a *DSM* diagnostic category in 1980<sup>10</sup> required significant adjustments and narrowing of extensive clinical observations. Several components and characteristics of narcissistic personality pathology that were central in the psychoanalytic conceptualization of narcissism and NPD were left aside in the final choice and formulation of the diagnostic trait criteria. One such characteristic relates to the process and feeling of fear, frequently acknowledged in psychoanalytic studies as a significant part of narcissistic pathology. Freud<sup>11</sup>

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noted narcissistic mortification as intense fear associated with narcissistic injury and humiliation. He also observed the shocking reaction when individuals face the discrepancy between an endorsed or ideal view of the self and a drastically contrasting realization.<sup>12</sup> Rothstein<sup>13</sup> associated such fear of falling short of ideals with the loss of perfection and accompanying humiliation, an important aspect of narcissistic personality functioning. Fiscalini<sup>14</sup> emphasized fear of autonomy in narcissistic interpersonal relations, and Kohut<sup>4,15</sup> pointed to fear associated with rejection, isolation, and loss of contact with reality, and loss of admiration, equilibrium, and important objects. Recently, Horowitz<sup>16</sup> highlighted fear in the context of wishes and defenses, and Kernberg<sup>17-19</sup> has referred to the unfolding of underlying fear in treatment of people with NPD, including fear of dependency and destroying the relationship with the analyst, fear of retaliation, of one's own aggression and destructiveness, and fear of death. Maldonado<sup>20</sup> identified the narcissistic intrapsychic trauma caused by the loss of a bond with a good object associated with ideals and meaning. Such a trauma threatens the individual's sense of continuity, coherence, stability, and wellbeing. In the delicate balance between repairing such traumas and working through conflicts, reactivations of fear inevitably occur, especially in the context of aggression and shame. An additional limitation in *DSM* is the absence of diagnostically specified levels of personality functioning. Narcissism ranges from healthy and proactive to pathological and malignant. Consequently, pathological narcissism and NPD often co-occur with consistent or intermittent areas and periods of high functioning,<sup>21</sup> including areas or periods of real competence and qualities, as well as cognitive, emotional, and interpersonal capabilities, and social skills. In clinical and social psychological reports, identification of narcissistic character pathology takes into consideration the functional aspects of shifts between self-enhancement and self-deflation, with intermittent periods and areas of competent functioning. Dimensions of character functioning that enable such evaluation include self-agency<sup>22-25</sup> and self-directedness.<sup>26</sup> These dimensions, which capture the individual's intentions, choices and strivings, purpose and goals, causal influence, and prediction and problem-solving skills, are especially useful for defining narcissistic self- and self-esteem regulation. Decision-making, a central component in self-regulatory and self-directing efforts, has gained attention in psychoanalytic studies, and recently also in social psychological studies of narcissism.

In order to advance our understanding of the different components operating in pathological narcissism and NPD it is necessary to further connect and integrate the psychoanalytic and clinical, as well as the social psychological, conceptualization of the disorder. One unifying approach may be to examine the neural underpinnings in narcissism as a way to refine its phenotype. Research on empathy and empathic functioning has already proven such a link to be most constructive and informative for NPD,<sup>27-29</sup> contributing to a significant change in identifying empathy, not as absent or present, but as a multifactorial and fluctuating capability.<sup>30</sup> This research has also influenced the discussion of the *DSM-5* personality disorder section, suggesting that empathy is an ability with inconsistencies and impairments, multiple components, a functional range, and a regulatory role. The aim of this paper is to further identify possible links between the psychoanalytic perspective on pathological narcissism and NPD, and neuroscientific research on narcissism and related pathologies. In this review, we will focus primarily on fear, as it has been considered a central and even a motivating factor in narcissistic personality functioning in psychoanalytic and clinical studies. Further, we will explore the impact that fear may have on decision-making. Understanding the processes and neurological underpinnings of fear and decision-making can potentially influence both the diagnosis and treatment of NPD.

## Fear

Fear is generally considered to be an emotional state, a psychological and psychophysiological response to perceived or anticipated threats or danger. Fear can often serve as an adaptive alert and survival mechanism. As such, it represents an ability to recognize danger and an urge to either confront or to avoid or escape, but fear can also in extreme situations cause paralysis and inability to protect oneself. Fear differs from anxiety as it is a response to real threats, a frightening object, event, or experience, while anxiety is considered an anticipatory warning signal, related to the expectation of unreal or imagined danger, including intrapsychic, unconscious conflicts and erotic feelings.<sup>31-34</sup> From a psychoanalytic perspective, fear can be triggered by concrete external events as well as by internal subjective or emotional experiences. Fear of not measuring up and falling short can be triggered in specific situations, ie, in the context

of evaluation, performance, or exposure. Such fear differs from the more complex or ambiguous fear that in the same way can threaten self-esteem, ie, fear of being overwhelmed, and facing success or relationships and intimacy, feelings of shame or guilt, and experiencing loss of control.<sup>23,32,35,36</sup> The subjective meaning ascribed to the experience of external life events, such as changes, gains and losses, challenges, or discouragements, can evoke sudden unexpected fear. Intense overwhelming affect, independently of whether the cause is external or internal, can also in itself be terrifying as it may challenge the individual's sense of internal control.

Fear can also become maladaptive or pathological, as such feelings, generated from an initial fear-provoking event, persist and have a negative effect on day-to-day behavior.<sup>37</sup> Fear of dark and negative self-experiences or of intolerable aspects of identity, in particular, can drive protective self-aggrandizement as well as destructive suicidal behavior enforced by overwhelming feelings of despair.<sup>23,38</sup> Certain events can also activate fears associated with earlier narcissistic trauma. Experiences in the present are linked to disorganized and fragmented memories of earlier mortifying or traumatic experiences. Sensory and emotional experiences associated with such early trauma<sup>39</sup> also contribute to the subjective perception and interpretation of a present event as traumatic, ie, retraumatizing.

A number of social psychological and personality-focused studies related to narcissistic functioning further indicate that fear and fear avoidance, especially of failure, are important motivating factors, a "self-regulatory strategy driven by specific achievement motives, namely, fear of failure" (p 11).<sup>40</sup> Those strategies involve achievement, competitiveness, improvement of performance, and perfectionism.<sup>40-42</sup> Similarly, fear of failure and accompanying shame can motivate procrastination or avoidance of commitment and performance.<sup>43,44</sup> On the other hand, fear management can also involve self-enhancing risk-taking and impulsivity.<sup>24,45</sup> Defensive behavior in response to exposure to failure and accompanying fear of failure is considered to be deeply ingrained, with automatic efforts to avoid failure. In general, these studies indicate that people who are afraid of failing can be motivated or even susceptible to either invest greater efforts in a task after being exposed to failure information, or to completely avoid such efforts. Fear related to self-esteem regulation and risk of falling short can underlie and motivate a range of behavior in

narcissistic personality disorder. High achievements can be motivated by fear of incompetence and failure; self-enhancement by fear of worthlessness and inferiority; perfectionism by fear of shame and self-criticism; pursuit of special affiliations by fear of losing status or influence; interpersonal ignorance and distancing by fear of humiliation, or being overpowered and lose control; and avoidance by fear of shame and exposure. These studies and observations raise several questions about the interaction between identifying, processing, and controlling fear from the perspective of narcissistic self-regulation. So far, studies have shown that people with high narcissism but not meeting criteria for NPD present with higher degree of alexithymia, ie, difficulties assessing own and other's emotions.<sup>46</sup> However, it is possible that by exploring neuroscientific evidence in narcissism and related pathologies, researchers and clinicians may begin to clarify and differentiate specific fear susceptibility and fear processing in people with NPD.

### **Fear, narcissism, and neuroscience**

Over the last several decades there has been significant growth in the understanding of the neurobiological basis of fear. At the center of the fear circuitry is the amygdala. The amygdala mediates processes such as the detection of emotionally arousing and/or salient stimuli.<sup>47</sup> Additional regions (eg, nucleus accumbens, hippocampus, some prefrontal regions, etc) form a neural network involved in the perception of threat, fear learning, and fear expression.<sup>48</sup> These areas individually mediate symptoms of fear and collectively act to produce an integrated fear response. Our nuanced understanding of this complex neural network results from imaging (eg, during fear conditioning studies), physiological (eg, skin conductance, eye-blink response), and psychopharmacological studies that not only enhance the mechanistic understanding of fear but also highlight the role of fear-related dysfunction in the generation and maintenance of various forms of psychopathology.

Failure to properly regulate fear responses is central to specific phobia, post-traumatic stress disorder, generalized anxiety, and some Axis II disorders (ie, fear of separation and loss of support in dependent personality disorder (DPD) of abandonment in borderline personality disorder (BPD), and of criticism, disapproval, and rejection in avoidant personality disorder (APD)).<sup>6</sup> While some disorders are largely associated with hypervigi-

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lance and an over-reactive fear response (eg, anxiety disorders and BPD), others are related to deficient fear reactivity (eg, psychopathy). Studies on the relationship between fear and narcissism have been sparse, both at a phenotypic and mechanism level. One study of individuals with narcissistic traits, as measured by the Narcissism Personality Inventory (NPI)<sup>49</sup> reported that they display diminished electrodermal reactivity to aversive stimuli,<sup>50</sup> indicating weak responses to punishment or aversive cues.

Despite the limited research directly examining fear and narcissism, there are studies of other related conditions with relevance to pathological narcissism that highlight the importance of fear in the expression of psychopathology. Specifically, the role of fear in psychopathy-related disinhibition has been the focus of studies for decades. NPD and psychopathy are considered to be overlapping constructs, both expressing symptoms of grandiosity, compromised empathic functioning, and callousness. In fact, Kernberg<sup>2</sup> suggested that narcissism might be the core of psychopathy.<sup>51-53</sup> Psychopathic individuals generally display an inability to form genuine relationships; limited (ie, grandiose) affective processing, especially with respect to anticipatory anxiety and remorse; an impulsive behavioral style involving a general failure to evaluate anticipated actions and inhibit the inappropriate ones; and a chronic antisocial lifestyle that entails great costs to society as well as for the affected individual.<sup>54</sup> While both affective and behavioral characteristics are important elements of psychopathy, the affective deficits have traditionally been considered to be the root cause of the psychopath's problems.

Affective deficits in psychopathy have most often been understood in the context of the low-fear model.<sup>55</sup> Consistent with this model, psychopaths display poor fear conditioning,<sup>55</sup> minimal electrodermal response in anticipation of aversive events,<sup>56</sup> and a lack of startle potentiation while viewing unpleasant versus neutral pictures.<sup>57</sup> However, other studies examining startle potentiation (eg, fear-potentiated startle and emotion-modulated startle) demonstrate that the psychopathy-related fear deficit is not absolute, but rather conditional depending on contextual variables.<sup>58-60</sup> Neuroimaging evidence suggests that psychopaths display reduced amygdala activation than controls during aversive conditioning, moral decision-making, social cooperation, and reduced memory for emotionally salient words.<sup>61-64</sup> However, results from imaging studies focused on the

amygdala are ambiguous. Other research indicates that the amygdala is hyper-reactive when psychopaths view certain emotionally salient scenes.<sup>65</sup> Thus, existing research does not indicate the presence of a reliable fear deficit in psychopathic individuals, though such deficits may be revealed under specific circumstances.

One explanation for the inconsistent nature of psychopathy-related fear deficits may involve an abnormality in attentional processes. Developments in neuroscience indicate that the function of the amygdala is more complex than just fear processing, and likely plays a significant role in attention and in detecting relevance.<sup>66</sup> With regard to psychopathy, according to the response modulation hypothesis, attention plays a crucial role in moderating fear and self-regulatory deficits. Response modulation involves the “temporary suspension of a dominant response set and a brief concurrent shift of attention from the organization and implementation of goal-directed responding to its evaluation” (p 717).<sup>67</sup> In the absence of normal response modulation, an individual is prone to ignore crucial contextual information needed to evaluate his or her behavior and exercise adaptive self-regulation.<sup>68,69</sup> Consequently, psychopaths are oblivious to potentially meaningful peripheral information because they fail to reallocate attention while engaged in goal-directed behavior. This difficulty balancing demands to process goal-directed and peripheral information creates a bias whereby psychopaths are unresponsive to information unless it is a central aspect of their goal-directed focus of attention.

An important implication of the response modulation hypothesis is that the emotion deficit of psychopathic individuals varies as a function of attentional focus. A recent experiment by Newman et al<sup>60</sup> involving fear-potentiated startle (FPS) provides striking support for this hypothesis. Of note, existing evidence suggests that FPS is generated via the amygdala.<sup>70</sup> The task used in this study required participants to view and categorize letter stimuli that could also be used to predict the administration of electric shocks. Instructions engaged either a goal-directed focus on threat-relevant information (ie, the color that predicted electric shocks) or an alternative, threat-irrelevant dimension of the letter stimuli (ie, upper/lower case of the letter or its match/mismatch in a 2-back task). The results provided no evidence of a psychopathy-related deficit in FPS under conditions that focused attention on the threat-relevant dimension. However, psychopathy scores were significantly and



inversely related to FPS under conditions that required participants to focus on a threat-irrelevant dimension of stimuli (ie, when threat cues were peripheral).

In a follow-up study, Baskin-Sommers and colleagues<sup>59</sup> specified this attentional-mediated abnormality in a new sample of offenders by measuring FPS in four conditions that crossed attentional focus (threat versus alternative focus) with early versus late presentation of goal-relevant cues. First, the authors replicated the key findings reported by Newman et al<sup>60</sup>: that psychopaths' deficit in FPS was virtually nonexistent under conditions that focused attention on the threat-relevant dimension of the experimental stimuli (ie, threat-focus conditions), but was pronounced when threat-relevant cues were peripheral to their primary focus of attention (ie, alternative-focus conditions). More specifically, the psychopathic deficit in FPS was only apparent in the early alternative focus condition, in which threat cues were presented after the alternative goal-directed focus was already established.

These results confirm the idea that attention moderates the fearlessness of psychopathic individuals and, moreover, implicate an early attention bottleneck as a proximal mechanism for deficient response modulation in psychopathy (see ref 71 for discussion of the bottleneck). Additionally, Larson and colleagues (unpublished data) recently completed an imaging study using this paradigm with an independent sample of inmates. Results indicated that decreased amygdala activation in psychopathic offenders occurred only during the early alternative focus condition. Under this condition, psychopaths also exhibited greater activation in selective attention regions of the lateral prefrontal cortex (LPFC) than nonpsychopaths, and this increased LPFC activation was associated with decreased amygdala activation. In contrast, when explicitly attending to threat, amygdala activation in psychopaths did not differ from nonpsychopaths. This pattern of amygdala activation closely parallels results for FPS and, moreover, highlights the potential role of LPFC in mediating the failure of psychopathic individuals to process emotion and other important information when it is peripheral to the primary focus of goal-directed attention. Overall, it appears that psychopathic individuals do ignore fear-related information, but only in the service of focusing on a specific goal. For example, such an inflexible focus on personal goals may underlie the self-centered, callous traits associated with psychopathy and may leave psychopathic individuals oblivious to the potentially devastating consequences of their behavior.

While one relationship between fear and psychopathology is related to deficient fear processing, another relationship between fear and psychopathology is related to over-reactivity to fear. Specifically, research on other forms of externalizing psychopathology, like borderline personality disorder, report increased FPS during instructed fear conditioning<sup>72</sup> and increased amygdala activity while viewing emotional slides.<sup>73</sup> Similarly, studies of trait externalizing demonstrated significant increases in FPS, amygdala, and emotion-related prefrontal cortex activity during fear conditioning.<sup>74</sup> Thus, these individuals appear unable to regulate their reaction to fear, essentially becoming consumed by its presence, ultimately resulting in a cascade of emotion-driven disinhibited behavior.

Although this neuroscientific overview applies to near neighbor psychopathologies, several findings introduce possible links to fear processing in pathological narcissism and NPD. Similar to people with psychopathy, focused attention on goals, such as ambitions, competition, and aspirations, and even on risk-taking efforts, may, for some people with pathological narcissism and NPD, enable ignorance of fear and serve as a fear modulator. The narcissistic individual's awareness is then directed away from potential triggers of feelings of fear and towards more securing or rewarding self-enhancing experiences. On the other hand, given the psychoanalytic observations of profound fear in NPD, and the recognition of the thin-skinned<sup>75</sup> and vulnerable narcissistic personality types,<sup>9</sup> the question is whether some people with pathological narcissism and NPD indeed are hypersensitive or over-reactive to fear, or can have impaired capability to tolerate and/or process feelings of fear. It is also possible that when people with pathological narcissism or NPD have to face fear without the possibilities of engaging in avoiding, goal-directed, or self-enhancing strategies, the experience becomes overwhelming and consuming, forcing drastic decisions with seemingly immediate short-term gains. Further research is needed to parse these possibilities. One avenue for understanding the role of fear in narcissism is to examine its impact on functionality, in processes such as decision-making.

## Decision-making

Psychoanalytic studies have primarily attended to the intrapsychic aspects of decision making. Identified as a secondary ego process linked between motivation and action,

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the unconscious courses involved in decision-making have nevertheless been a prime focus of interest.<sup>76,77</sup> Used to institute defenses and reach resolutions or compromises, decision-making is also influenced by physiological factors, and part of symptom formation and psychopathology. Fear can influence decision-making by engulfing either an individual's sense of agency or sense of identity, or both. The former can affect competence, while the latter can cause self-confusion and uncertainty about who one really is. Although not currently acknowledged as a diagnostic or clinical indicator of NPD, nevertheless, remarkable lapses in some narcissistic individuals' decisions can force them into unbearable situations and life crises that call for urgent need of intensive treatment. Sometimes such lapses can have devastating consequences, including suicide.<sup>78</sup> In clinical settings, therapists can face a paradoxical discrepancy between such patients' consistent self-control and proactive competence, and their sudden disparate decision strategies that seem ruled by immediate short-term gain and misjudgment, or by ignorance of salient negative or even destructive consequences, especially in interpersonal or professional/financial areas. Usually referred to either as narcissistic crises or trauma motivated by urgent, defensive push for protection and enhancement of self-esteem, or by avoidance of perceived inevitable ultimatums, many of the roots and underpinnings for such decision-making are still relatively unknown.

As with fear, there is an important normal aspect of decision-making, especially its role in self-esteem regulation and sense of control, that contributes to an organizing perception of being in charge of cause-effect, input-outcome, and action-result. In particular, efforts to optimize reward, self-enhancement, and self-promotion have proved important. Decision-making as part of an agency model for narcissistic personality functioning has been studied in social psychology in the context of approach—avoidance motivation, specifically in relationships and in financial and business decisions.<sup>24,79-81</sup> Narcissistic factors accompanying and guiding decision-making can include arrogance, overconfidence and overestimation, visibility, or impulsivity and risk taking. Contrary to lapses in decision making, some people with pathological narcissism or NPD can present with more consistent patterns of self-promoting decision making, involving risk-taking, and disregard or ignorance of both their own and others' feelings and wellbeing. On the other hand, it is also possible that dysregulated feelings of fear can impact the decision-making patterns of these individuals.

## **Decision-making, narcissism, and neuroscience**

In recent years, there has been a surge of research on decision making from a neuroscience perspective. Though there are a number of decision-making models, in this review we focus on a particular neurobiological theory of decision making that highlights the interaction between experience and emotion: the somatic marker hypothesis. Antonio Damasio's<sup>82</sup> somatic marker hypothesis posits that physiological processes, such as emotion, act as signals to influence behavior. More specifically, for each experience an association between that situation and the corresponding somatic states (ie, emotions) is made. The recurrence of a particular situation triggers the reactivation of emotion-influenced neural patterns, which biases decision-making toward choices that maximize reward and minimize punishment.

Damasio and others propose that the orbitofrontal cortex, specifically the ventromedial prefrontal cortex (vmPFC), is central to decision-making. Patients with lesions to the vmPFC display deficits in learning from previous experiences, poor decision-making, flat affect, and impairments in their ability to react to emotional situations.<sup>83</sup> This pattern of impairment led Damasio to hypothesize that the primary dysfunction of patients with vmPFC damage was an inability to use emotions to aid in decision-making (eg, in personal, monetary, and moral domains). To test this hypothesis in an experimental context, Bechara developed the Iowa Gambling Task. This task consists of four decks of cards, each associated with varying levels of reward and punishment (two decks are low reward/low punishment [advantageous]; two decks are high reward/high punishment [disadvantageous]). In general, participants sample both the advantageous and disadvantageous decks equally, but after experiencing a number of high punishments, they shift predominantly to advantageous decks. In contrast, subjects with vmPFC damage tend to continue choosing from the disadvantageous decks. Moreover, vmPFC lesion patients did not display anticipatory emotional responses (eg, skin conductance), indicating a deficit in anticipating the emotional impact of future rewards and punishments (see ref 84 for review). Finally, individuals with lesions to the amygdala also display impairments, similar to vmPFC patients, in performance on the Iowa gambling task. However, unlike the vmPFC patients, those with amygdala lesions display impairments in registering the emotional impact of rewards and punishments, rather than

the anticipation of this feedback. Ultimately, emotional states are elicited during decision-making and are represented in the brain through both cortical (eg, insular cortex; vmPFC) and subcortical pathways (eg, mesolimbic dopamine system; amygdala). Taken together, this model provides a basis for understanding how basic motivational and emotional processes are related to complex decision-making processes in a variety of contexts.

Increasingly, the principles gleaned from observing decision-making deficits in patients with lesions are being applied to understanding a diverse range of pathologies in which deficits in decision-making are evident and where emotions can play a critical role. Individuals with NPD are characterized by a sense of entitlement (ie, self-serving bias), taking advantage of others for personal gain, and hypersensitivity to criticism/punishment. However, it is possible that decision-making in such context is a consequence of weak somatic markers due to the underlying defect in emotional reactivity (see above section on fear).

In a study by Krusemark et al<sup>85</sup> undergraduates who scored high on a questionnaire measure of narcissism displayed reduced brain activity for self-serving attributions following success (positive) feedback. More specifically, these individuals had decreased activity in bilateral occipital cortex, bilateral temporal cortex, left posterior parietal cortex, right dorsomedial prefrontal cortex, and bilateral vmPFC (see also ref 46 for similar neural patterns related to narcissism). As noted above, deficits in vmPFC are associated with poor decision-making, possibly because of the inability to integrate affective information from external stimuli. Based on the evidence that individuals with high narcissism displayed reduced physiological responses to arousing cues,<sup>50</sup> the results reported by Krusemark and colleagues may suggest that they make more self-serving attributions following success because of weak stimulus registration, integration, and affective reactivity.

The association between impaired decision-making and vmPFC activity has also been made with psychopathy. A number of laboratory paradigms demonstrate vmPFC-related deficits in psychopathy, such as deficits in reversal learning,<sup>86,87</sup> and in gambling tasks.<sup>88,89</sup> Moreover, Koenigs and colleagues<sup>90</sup> reported that a subgroup of psychopathic offenders (ie, primary low-anxious psychopaths) performed similarly to vmPFC lesion patients in the Ultimatum and Dictator economic decision-making games. Specifically, both primary psychopaths and

vmPFC lesion patients accepted fewer unfair offers in the Ultimatum game and offered lower amounts to others in the Dictator game. These results support the purported connection between psychopathy and vmPFC dysfunction. Moreover, they suggest that, as in narcissistic individuals, a deficit in integrating emotion with action may diminish the processes of self-insight and self-reflection in psychopathic individuals.

Further highlighting the potential utility of the somatic marker hypothesis for understanding the decision-making patterns of those with narcissism, individuals with high narcissism display poor performance on the Iowa Gambling Task in a manner similar to those with vmPFC lesions<sup>81</sup> and with psychopathy.<sup>91-93</sup> Specifically, individuals with high narcissism chose significantly more from the disadvantageous decks, which provided larger immediate reward but resulted in long-term net loss. Lakey and colleagues<sup>81</sup> suggested that narcissistic individuals are overly focused on reward, which biased the appraisals of reward and punishment, thus impeding adaptive decision-making. However, these results may also reflect impairment in the processing of negative affect (eg, fear), which often guide a shift in decision-making that would avoid repeated punishment. Though the distinction between these perspectives may seem subtle they suggest differential sources of affective decision-making impairment: one related to hypersensitivity to reward and the other related to insensitivity to negative affects. Overall, specific deficits in affect processing may contribute to this decision-making impairment in people with pathological narcissism and NPD, and future research will need to parse and specify their decision-making and affective capability. Regarding the brain mechanisms of pathological narcissism, there are multiple neural structures that overlap with decision-making processes, notably the amygdala and vmPFC. Both brain regions have been linked to narcissism, albeit currently through limited evidence. Although at this time, it is impossible to make definitive statements about the neural root of pathological narcissism, the development of theoretical models that integrate emotion and decision-making would serve to more precisely understand the self-centered, self-serving, and self-enhancing actions of narcissistic individuals.

## Conclusion

The possible interactional patterns, both self-regulatory and neural, between fear and decision-making as out-

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lined above, implicate the advantage of integrating clinical studies and neuroscience to improve our understanding of pathological narcissism and the diagnosis of NPD. The psychoanalytic perspective of fear and decision-making provide more in-depth conceptualizations of narcissism to which neuroscience can add important information and perspectives to further identify the intervening processes in narcissistic personality functioning. This has the potential of significantly improving the diagnosis of NPD and consequently also the treatment approach and strategies for patients with narcissistic personality functioning. Accordingly, narcissistically based decision-making may be influenced by affect dysregulation, such as hypersensitivity to fear. In addition, fear in some individuals may be accompanied by other intense feelings (ie, secondary feelings) such as shame, rage, self-hatred, etc, or by early self-esteem related traumatic experiences, making feelings of fear intolerable and therefore especially challenging to appropriately integrate in the decision process. Treatment focusing on increasing self-reflection, insight, and ability for emotion awareness and regulation would in such case potentially help to redirect or alter the narcissistic patient's decision-

making. Alternatively, patients with NPD may also be overly goal-focused in the service of self-enhancement, and hence, like people with psychopathy, be unable to redirect their attention. Treatment efforts focusing on understanding and integrating vulnerability and feelings of fear in self-functioning and self-directedness would be most meaningful for these patients. Importantly, these two treatment alternatives assume that narcissistic patients possess the ability to both recognize and process feelings of fear, even though they may for various reasons be insensitive, ignorant, hypersensitive or over-reactive to fear. However, it is also possible that neurocognitive limitations in recognizing and integrating feelings of fear greatly limit decision-making capabilities. In such case treatment focusing on learning alternative strategies may be more useful, but also require the patient's motivation and realization of the necessity for change. Further research is called for to fully identify such limitations. In sum, strategies to address the role of fear and pattern of decision-making may potentially diminish the common risks for ruptures and premature termination, and ultimately promote collaborative alliance building with patients with pathological narcissism and NPD. □

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### **El temor y la toma de decisiones en el trastorno narcisista de la personalidad: una relación entre psicoanálisis y neurociencias**

Cada vez ha resultado más productiva la relación entre los estudios psicoanalíticos y las neurociencias respecto a la identificación y comprensión del funcionamiento de la personalidad. Este artículo se centra en el narcisismo patológico y en el trastorno narcisista de la personalidad (TNP), con el objetivo de explorar dos aspectos clínicamente relevantes del funcionamiento narcisista que también se reconocen en el psicoanálisis como son el temor y la toma de decisiones. La evidencia que ha surgido de los estudios neurocientíficos de condiciones relacionadas, como la psicopatía, sugiere vinculaciones entre el funcionamiento afectivo y cognitivo, las que pueden influir en el sentido de auto-agencia y la auto-regulación narcisista. La atención puede jugar un papel esencial en la moderación del temor y de los déficit auto-reguladores, y la interacción entre experiencia y emoción puede ser central para la toma de decisiones. En esta revisión se explora el temor como un factor motivador en el funcionamiento de la personalidad narcisista y el impacto que puede tener el temor en la toma de decisiones en personas con un narcisismo patológico y en el TNP. La comprensión de los procesos y bases neurológicas del temor y la toma de decisiones puede influir potencialmente tanto en el diagnóstico como en el tratamiento del TNP.

### **Peur et prise de décision dans le trouble de personnalité narcissique : un lien entre psychanalyse et neuroscience**

Associer les études psychanalytiques et les neurosciences se révèle de plus en plus productif pour identifier et comprendre le fonctionnement de la personnalité. Cet article s'intéresse au narcissisme pathologique et au trouble de la personnalité narcissique (TPN) afin d'explorer deux aspects cliniquement pertinents du fonctionnement narcissique reconnus aussi en psychanalyse : la peur et la prise de décision. Des études neuroscientifiques sur des troubles associés, comme les psychopathies, ont montré qu'il existait des liens entre le fonctionnement affectif et cognitif pouvant influencer sur le sens de l'acte intentionnel et de l'autorégulation narcissique. L'attention jouerait un rôle crucial dans la modération de la peur et des déficits d'autorégulation, l'interaction entre expérience et émotion pouvant être centrale pour la prise de décision. Nous analysons ici la peur comme facteur stimulant de la personnalité narcissique et son impact sur la prise de décision chez les sujets souffrant de narcissisme pathologique et de TPN. La compréhension des processus et des bases neurologiques de la peur et de la prise de décision pourrait influer à la fois sur le diagnostic et le traitement du TPN.

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