Differential endophenotypic markers of narcissistic and antisocial personality features: A psychophysiological investigation

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A B S T R A C T

This study investigated the differential psychophysiological correlates of narcissistic and antisocial personality features in a college student sample. Skin conductance (SC), respiratory sinus arrhythmia (RSA), and pre-ejection period (PEP) were monitored while participants watched a countdown to an aversive noise blast and viewed emotionally valenced slides. Results indicated that narcissistic personality features were unrelated to SC reactivity during the countdown, whereas antisocial personality features were negatively related to SC reactivity. Narcissistic personality features were also related to RSA decreases and PEP shortening while viewing happy slides, whereas antisocial personality features were not. Taken together, these findings suggest differential endophenotypic markers of narcissistic and antisocial personality features despite their clinical similarities.

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1. Introduction

The causes and correlates of narcissistic personality disorder (NPD) traits remain mysterious. Nevertheless, there is broad consensus that NPD traits covary with several personality disorder traits, especially those of antisocial personality disorder (ASPD; Gunderson & Ronningstam, 2001; Gunderson, Ronningstam, & Smith, 1991; Hart & Hare, 1998; Widiger & Corbitt, 1993), a disorder characterized by pathological levels of antisocial behavior. In a sample of 106 psychiatric inpatients, Oldham and colleagues (1992) found that 29% (5 out of 17) of individuals meeting criteria for NPD, characterized by pervasive and pathological narcissistic personality features, also met criteria for ASPD, whereas only 2% (2 out of 89) of individuals without NPD met criteria for ASPD. The significant covariance between these disorders also occurs in nonclinical samples (e.g., Watson & Sinha, 1998). Similar to Oldham and colleagues' inpatient findings, Watson and Sinha (1998) examined a sample of 1729 college students and found that 23% (17 out of 76) of those meeting criteria for NPD also met criteria for ASPD, whereas only 4% (59 out of 1653) of those without NPD met criteria for ASPD. To better understand the nature of this covariance, numerous authors (e.g., Gunderson & Ronningstam, 2001; Holdwick, Hilsenroth, Castlebury, & Blais, 1998; Paulhus, Robins, Trzesniewski, & Tracy, 2004) have investigated the affective and interpersonal correlates of NPD and ASPD traits, although none has examined the differential psychophysiological markers of these traits. The present study seeks to investigate these markers in a non-clinical sample.

The Diagnostic and Statistical Manual for Mental Disorders 4th edition (DSM-IV; American Psychiatric Association, 2000) attempted to differentiate the disorders by making the criteria for ASPD primarily behavioral and those for NPD primarily affective and interpersonal. Moreover, an ASPD diagnosis requires a childhood history of antisocial behavior, whereas an NPD diagnosis does not. However, researchers in the DSM-IV field trials noted that completely separating the disorders would have resulted in artificially narrow constructs with little convergent validity (Widiger, Cadoret, Hare, & Robins,

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1996). As a result, NPD and ASPD were characterized as separate disorders within DSM-IV's personality disorder Cluster B (the "dramatic, emotional, erratic" cluster).

In addition to creating a somewhat artificial distinction between the disorders, the DSM-IV assigned somewhat arbitrary criterion cutoffs under the assumption that NPD and ASPD represented discrete phenomena. Taxometric analyses of NPD are mixed (Fossati et al., 2005; Foster & Campbell, 2007), whereas taxometric analyses of ASPD (e.g., Marcus, Lilienfeld, Edens, & Poythress, 2006) suggest a dimensional rather than a discrete class (taxonic) solution. As authors have similarly found dimensional solutions for most other DSM-IV personality disorders (e.g., borderline personality disorder; Rothschild, Cleland, Haslam, & Zimmerman, 2003), researchers have discussed the utility of conceptualizing personality disorders within a dimensional framework (e.g., Krueger & Tackett, 2005). Therefore, we conceptualize the features of narcissistic and antisocial personality disorders as continuous phenomena (e.g., narcissistic personality disorder features as marking the extreme end of a narcissism dimension).

The central features of narcissistic personality disorder include unwarranted feelings of grandiosity, an excessive need for admiration, and a lack of empathy for others occurring across a variety of contexts. This socially noxious constellation of personality traits may manifest as an unreasonable sense of entitlement, manipulation of others for personal gain, oversensitivity to criticism, and externalization of blame. Despite lack of empathy being a central characteristic of narcissistic personality disorder, the literature investigating empathy and narcism is equivocal. Although some researchers have found that narcissistic personality features correlate negatively with empathy (Munro, Bore, & Powis, 2005), others have found that this correlation is only evident for some, but not all, measures of empathy (Watson, Grisham, Trotter, & Biderman, 1984). Specifically, narcissistic personality features were negatively related to the emotional experience of empathy, but unrelated to the intellectual understanding of other's experiences.

A lack of empathy is also a core affective deficit of antisocial personality disorder. In addition, antisocial personality features include a failure to conform to social norms; repeated impulsive, aggressive, and irresponsible behavior; repeated lying; disregard for others; and lack of remorse. Antisocial personality disorder may manifest as persistent criminal behavior, conning others for personal gain, violence, and other reckless behaviors. Despite their descriptive differences, narcissistic and antisocial personality disorders share several core affective and interpersonal deficits.

Livesley, Jackson, and Schroeder (1992) found that narcissistic and antisocial personality features load highly on an "interpersonal disesteem" factor, characterized by a disregard for other people and neglect of personal obligations. Similarly, Holdwick et al. (1998) found that interpersonal exploitativeness, lack of empathy, disregard for others, and envy characterized narcissistic and antisocial personality personality disorders. According to Gunderson and Ronningstam (2001), the grandiosity characteristic of narcissism is the primary discriminating feature between narcissistic and antisocial personality disorders. By all accounts, the constructs are difficult to disentangle in terms of affective and interpersonal deficits. Moreover, no previous research has attempted to differentiate these personality types in terms of their endophenotypic markers, which are internal and not obvious indicators of an observable phenomenon (Gottesman & Shields, 1972). Such differentiation may help to shed light on distinct affective and interpersonal components of these personality constructs.

The primary physiological constructs investigated in studies of narcissistic and antisocial personality features have been skin conductance responding (SCR) and heart rate (HR). SCR is a gross index of autonomic nervous system activation. A major strength of SCR is the plethora of research investigating its psychological correlates in healthy individuals. The primary weakness of SCR is that it is not particularly sensitive to the valence of stimuli. In other words, increases in SCR occur during both positive and negative emotional experiences in psychologically healthy individuals (Fowles, 1980, 1988). Despite increased SCR activity during both positive and negative emotional experiences, SCR is a well-replicated indicator of the activity of the behavioral inhibition system (BIS; Gray, 1982), a cognitive and physiological system that inhibits behavior,in response to threat (Fowles, 1988).

HR is also a gross index of autonomic activation. The primary limitation of using HR as an index of autonomic influence on the heart is that it is greatly influenced by both branches, sympathetic and parasympathetic, of the autonomic nervous system (Beauchaine, 2001). This dual influence makes HR difficult to interpret. However, there are more sophisticated measures to help isolate sympathetic and parasympathetic influences on HR. Pre-ejection period (PEP; Sherwood, Allen, Obrist, & Langer, 1986), the time between left ventricular depolarization and ejection into the aorta, is a relatively recently developed means of measuring sympathetic nervous system influence on HR. PEP is an inverse indicator of behavioral activation system (BAS; Fowles, 1988), a cognitive and physiological system that facilitates behavior in response to potential reward. In other words, PEP shortening (decrease in time between left ventricular depolarization and ejection into the aorta) is indicative of increases in sympathetic influence on the heart or BAS activation. Conversely, respiratory sinus arrhythmia (RSA), an index of the influence of the vagus nerve on HR, is largely mediated by the parasympathetic nervous system. As parasympathetic influence on HR increases, RSA increases and HR slows.

Porges (1995) posited that RSA is an index of coping with the social world in mammals. RSA reactivity in response to environmental stimuli appears to be a marker of emotion regulation (Beauchaine, 2001; Butler, Wilhelm, & Gross, 2006). Increases in RSA are associated with positive mood (Ingjaldsson, Laberg, & Thayer, 2003) and empathetic responding (Eisenberg et al., 1996), whereas decreases in RSA are associated with negative affect (Thayer, Friedman, & Borkovec, 1996; Wilhelm & Roth, 1998) and active responses to task demands (Bernston, Cacioppo, & Quigley, 1995; Iani, Gopher, & Lavie, 2004).

Only two studies (Kelsey, Ornduff, McCann, & Reiff, 2001; Kelsey, Ornduff, Reiff, & Arthur, 2002) have investigated the physiological correlates of self-reported narcissism. Kelsey and colleagues (2001) examined the psychophysiological