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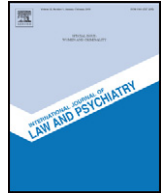
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Implicit vs. explicit dimensions of guilt and dominance in criminal psychopathy☆☆☆



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ABSTRACT

The current study investigated the relationship between psychopathy and two concepts that hold a central position in conceptualizations of this disorder, being guilt and dominance. Both constructs were measured using explicit measures (i.e., self-report), as well as indirect assessment (i.e., the Single Category Implicit Association Test; Sc-IAT). Our sample consisted of 43 psychopathic offenders, 42 nonpsychopathic offenders, and 26 nonoffender controls. Although no overall group differences emerged, the lifestyle/antisocial traits of psychopathy (Factor 2) predicted reduced self-reported guilt on a dimensional level. As hypothesized, such a relationship was absent for the interpersonal/affective dimension of psychopathy (Factor 1). Psychopathy was unrelated to implicit self-guilt associations. Regarding dominance, psychopathy was not significantly associated with indirectly or explicitly assessed dominance. These findings are interpreted in the light of empirical knowledge on moral emotions, insight and response distortion in highly antisocial offenders.

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1. Introduction

Psychopathy has a relatively low prevalence in the general population. This disorder is, however, highly overrepresented in individuals in the forensic system (i.e., <1% vs. 15–25%, respectively; Blair, Mitchell, & Blair, 2005). This discrepancy is not surprising considering the nature of psychopathic traits, which include emotional aberrances such as a lack of empathy and guilt, and behavioral characteristics like impulsivity and irresponsibility (Hare, 2003). Furthermore, psychopathic offenders display an interpersonal style that is typified by deceitfulness, manipulation, and an inclination towards pathological lying (Cooke, Michie, & Hart, 2006; Hare, 2003). These latter interactional features make the truthfulness of psychopaths' self-reported statements about one's own functioning a major concern for researchers and clinicians. Next to that,

the accuracy of self-reported information might be compromised in these offenders due to a lack of insight, which is thought to be characteristic of personality pathology in a broader sense (Lobbestael, Arntz, Löbbes, & Cima, 2009; Millon & Davis, 2000).

Offenders presenting themselves in a way that is not reflective of their actual functioning can have drastic consequences. For example, expressing feelings of guilt might result in patients being more readily discharged from forensic mental health facilities (Niesten, Nentjes, Merckelbach, & Bernstein, 2015). Research into assessment strategies that are not solely dependent on offenders' self-report is therefore of crucial importance. One such assessment approach is the use of indirect measures, which are thought to produce outcomes that are less sensitive to deliberate cognitive influences than explicit assessment methods like self-report. Also, such measures are believed to be less dependent on the capacity for introspection (Greenwald, McGhee, & Schwartz, 1998; Roefs et al., 2011). Previous research using indirect assessment has proven useful in determining the external correlates of psychopathy, by showing, for example, that psychopathy is associated with relatively positive indirect attitudes towards aggression and violence (Snowden, Gray, Smith, Morris, & MacCulloch, 2004; Zwets et al., 2015). These attitudes are not necessarily related to psychopathy when assessed in a more explicit way (Snowden et al., 2004).

In the current study, we elaborated on such previous research by examining whether indirect measures can also be used in assessing dominance and guilt in relation to psychopathy, with the latter being assessed

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using the revised Psychopathy Checklist (PCL-R; Hare, 2003). As both indirect and explicit measures have shown to provide independent, incremental validity in predicting psychopathological behavior (Roefs et al., 2011), we adopted a multi-method approach that involved both of these assessment methods. We chose to focus on dominance and guilt for several reasons. First, although both of these concepts figure prominently in conceptualizations of psychopathy, they have received relatively little empirical attention in relation to this disorder. Second, studies that did examine guilt or dominance in psychopathy tend to show some inconsistencies, which may be at least partially explainable by the use of different (direct and indirect) measures. Last, both guilt and dominance show robust links to antisocial behavior on a theoretical and empirical level (e.g., Morrison & Gilbert, 2001; Tangney, Stuewig, Mashek, & Hastings, 2011), stressing the importance of a thorough understanding of the role that these constructs play in psychopathy.

1.1. Psychopathy and guilt

Guilt is evoked by (un)conscious self-evaluation and refers to the negative, emotional state that individuals experience when they feel that their actual or anticipated behavior violates internalized moral standards (Tangney, Stuewig, & Mashek, 2007). Guilt is thought to serve as an internal guide in behaving in a morally appropriate way, by providing individuals with feedback on the acceptability of their behavior. As such, this moral emotion has a strong interpersonal basis, playing a central role in preventing transgressions towards others or correcting such violations, by apologizing and undoing the damage done (Sheikh & Janoff-Bulman, 2010). Not surprisingly, guilt is positively related to prosocial behavior (Olthof, 2012) and the propensity to take responsibility for one's actions (Berndsen & Manstead, 2007). In contrast, the experience of guilt is negatively associated with antisocial attitudes and behavior (Tangney et al., 2011), as well as with criminal recidivism (Tangney, Stuewig, & Martinez, 2014).

Although guilt is thus considered a key motivating factor in preventing antisocial behavior, only a handful of studies have focused on this moral emotion in psychopathy. Some of these investigations found psychopathy to be related to guilt (Johnsson et al., 2014), whereas others did not (Batson, Gudjonsson, & Gray, 2010). These studies yielded inconsistent results and relied solely on self-report, stressing the need for the use of alternative measures. Such research was conducted by Cima, Tonnaer and Lobbestael (2007), showing self-reported psychopathy to be correlated to reduced implicit guilt in an offender sample, as evidenced in an attention shift away from guilt-related words on a dot-probe task.

The current study further explored the relationship between psychopathy and guilt using both a self-report measure of guilt, as well as an indirect assessment method, being the Single Category Implicit Association Test (Sc-IAT; Karpinski & Steinman, 2006). The Sc-IAT assesses associations with a single target category, in which it differs from the original paradigm, the Implicit Association Test (IAT; Greenwald et al., 1998), which measures the relative strength of associations with two opposing concepts. Here we assessed the relative degree to which individuals associate themselves with guilt. Based on the aforementioned research, we hypothesized psychopathy to be associated with less strong guilt associations on the Sc-IAT. Factor analytic research suggests that psychopathy is represented by at least two underlying factors. Factor 1 describes affective and interpersonal traits, whereas Factor 2 covers behavioral characteristics (Hare, 1991). We expected the relationship between psychopathy and self-guilt association strength to be carried mainly by Factor 1, as this psychopathy dimension describes the lack of such moral emotion. On the explicit measure (i.e., on self-report), we did not expect to see a relationship with psychopathy (or its factors).

1.2. Psychopathy and dominance

We applied a similar multi-method approach to examine dominance in relation to psychopathy. Dominance refers to the degree to which

individuals feel a sense of influence or control over the environment (Jerram, Lee, Negreira, & Gansler, 2014). Psychopathic individuals are described as having a strong tendency to dominate interpersonal interactions (e.g., Nyholm & Häkkinen-Nyholm, 2012). Relatedly, previous empirical investigations show that psychopathy, especially Factor 1, is related to a self-reported dominant interpersonal style (Gullhaugen & Nøttestad, 2011; Patrick, Hicks, Nichol, & Krueger, 2007), as well as to dominant interpersonal behavior during interview situations (Kosson, Steuerwald, Forth, & Kirkhart, 1997; Vitacco & Kosson, 2010). Notably, this association seems stronger for observer-rated dominance than for self-report, again stressing the importance of alternative assessment strategies in forensic contexts. The need to explore the role of dominance in psychopathy is further underlined by a study by Morrison and Gilbert (2001). This research showed that offenders who report themselves to be more dominant and superior than others are prone to aggressive responding in the face of provocation, such as when being humiliated or rejected. Part of psychopaths' aggression might thus be explained by these individuals having a self-concept in which dominance plays an important role.

Building on these previous findings, the current study assessed self-dominance associations using a second variety of the Sc-IAT. We hypothesized psychopathy to be related to relatively strong self-dominance associations, and we expected this relationship to be explained mainly by Factor 1. In order to investigate potential discrepancies between implicit and explicit dominance we also adopted the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). Although this self-report questionnaire was derived from Narcissistic Personality Disorder criteria, research shows a robust association between NPI scores and a variety of dominance measures (e.g., Cain, Pincus, & Ansell, 2008). We expected psychopathy to be positively related to NPI scores, with this association again being carried by Factor 1, as was also found in a previous study by Schoenleber, Sadeh, and Verona (2011).

In sum, the current study adopted a multi-method approach to investigate two constructs that hold a central position in the conceptualization of psychopathy, being guilt and dominance. We hypothesized to see a negative relationship between psychopathy (mainly Factor 1) and implicit, but not explicit feelings of guilt (reflective of a dissociation between actual and reported moral feelings). Last, we expected psychopathy (again, especially Factor 1) to be positively related to self-dominant associations and explicitly assessed dominance.

2. Method

2.1. Participants

Participants were 85 criminal offenders and 26 nonoffender controls. Forensic participants were recruited in six different forensic psychiatric centers and a prison in the Netherlands. Thirty-six of these offenders were also participating in an RCT on the effectiveness of forensic Schema Therapy versus Treatment as Usual (Bernstein et al., 2012). Exclusion criteria for the nonoffenders were a) insufficient understanding of the Dutch language; b) any current axis I disorder; c) the presence of threshold minus two criteria for any DSM-IV Personality Disorder (PD); d) a PD diagnosis Not Otherwise Specified (i.e., fulfillment of five or more criteria of different PD diagnoses), e) an IQ <80, (f) serious neurological impairment, (g) an autistic spectrum disorder (ASD), and (h) an increased level of self reported psychopathy. Inclusion criteria for the offenders were (a) the presence of a DSM-IV Antisocial, Narcissistic, Borderline, or Paranoid PD, or a PD not otherwise specified with at least five cluster B PD traits; and (b) good understanding of the Dutch language. Exclusion criteria were (a) the presence of current psychotic symptoms, (b) schizophrenia or bipolar disorder, (c) current drug or alcohol dependence, (d) an IQ <80, (e) serious neurological impairment, (f) an ASD, and (g) fixated pedophilia.

The offenders were diagnosed with Antisocial PD (83.5%), Borderline PD (31.8%), Narcissistic PD (31.8%), Paranoid PD (9.4%), and Avoidant PD (2.4%). (Percentages do not add up to 100% because offenders could have more than one PD diagnosis.) Types of crime for which the offenders were institutionalized included homicide offenses (29.4%), assault (20.0%), property crime with (10.6%) and without (1.2%) violence, pedophilic (10.6%) and nonpedophilic (18.8%) sexual offenses, arson (5.9%), and drug offenses (3.5%). Ten different nationalities were represented in the offender sample, with the most prevalent being Dutch (74.1%), Surinamese (7.1%), and Moroccan (8.2%). All nonoffenders had Dutch nationality. Further sample descriptives are shown in Table 1. The ethical committee of the Faculty of Psychology and Neuroscience of Maastricht University provided ethical approval for this study and all participants provided informed consent.

2.2. Measures

2.2.1. Screening measures

2.2.1.1. SCID I and II. The Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1997) and the SCID for Axis II PDs (SCID-II; First, Spitzer, Gibbon, Williams, & Benjamin, 1994) were used to assess psychopathology in the nonoffenders. The SCID I and II were administered by the first author or a second rater. Single rater intraclass correlation coefficients (ICCs) between these two raters were computed based on five SCID interviews with patients that did not participate in the current study, yielding ICCs ranging from .79 to .99 ($M = .88$) for the PDs. The five patients had insufficient Axis I diagnoses to determine kappas. However, disagreement over the absence/presence of a disorder only occurred for 2 out of 24 diagnoses, reflecting a high level of consistency between ratings.

2.2.1.2. LSRP. Nonoffenders' psychopathy levels were assessed using the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995). Participants were excluded from the current study if their score exceeded 58. This cut-off score is approximately one *SD* above the mean total score found in other studies in nonoffender, male populations (e.g., Uzieblo, Verschuere, van den Bussche, & Crombez, 2010). One potential control participant was excluded as his score exceeded this cut-off criterion.

2.2.1.3. SIDP-IV. Offenders were interviewed with the Structured Interview for DSM-IV PDs (SIDP-IV; Pfohl, Blum, & Zimmerman, 1995) in order to assess PDs. Diagnoses were derived from patients' clinical files when the SIDP-IV had already been recently administered ($n = 52$). Single rater ICCs for a subsample of eighteen interviews (from different clinics) ranged from .53 to .95 ($M = .72$) and average rater ICCs ranged from .70 to .95 ($M = .83$). Ratings were averaged when interviews had been scored twice. The first author (L.N.) administered the SIDP-IV to the remaining offenders. Five of the latter interviews were scored by a second rater, yielding single rater ICCs for the PDs of interest ranging from .75 to .96 ($M = .84$).

2.2.1.4. IQ. IQs were derived from files when these had recently been determined ($n = 69$), using the Wechsler Adult Intelligence Scale-III (WAIS-III; Wechsler, 1997). For the remaining participants, a shortened version of the WAIS-III was administered, based on the subtests Block Design and Vocabulary (Jeyakumar, Warriner, Raval, & Ahmad, 2004).

2.2.1.5. ASQ. The Autism-Spectrum Quotient (ASQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001) was administered to the nonoffenders when clinical observation gave reason to suspect an ASD. Individuals were excluded if their score was higher than the cut-off score of 32 on this questionnaire (Baron-Cohen et al., 2001). None of the potential controls exceeded this score. Offenders were excluded when they had been diagnosed with an ASD by clinical staff, for which more extensive diagnostic procedures were often times used (e.g., patient interviewing and observation supplemented with collateral information).

2.2.2. Main predictor and outcome variables

2.2.2.1. PCL-R. The PCL-R was used to assess psychopathy in the offenders (Hare, 2003). This 40-item scale was scored by the clinical staff of the institution in which an offender resided, based on a file review complemented with an interview. These staff members had all been trained during an extensive three day PCL-R assessment course. In the Netherlands, this course is only offered to clinical professionals holding an academic degree. The training covers both the theoretical background and practical application of the instrument and stresses the importance of scoring at least ten practice interviews combined

Table 1
Sample characteristics ($N = 111$).

	Nonoffender controls ($n = 26$)		Nonpsychopathic offenders ($n = 42$)		Psychopathic offenders ($n = 43$)		Test statistics
	<i>M</i> (<i>SD</i>)	Range	<i>M</i> (<i>SD</i>)	Range	<i>M</i> (<i>SD</i>)	Range	
Age (years)	35.6 (13.5)	18–57	39.1 (10.1)	24–64	39.2 (9.4)	23–65	$F(2, 108) = 1.10, p = .34$
IQ	101.2 (12.5)	80–128	96.3 (11.2)	80–121	94.7 (11.3)	80–120	$F(2, 108) = 2.69, p = .07$
LSRP total	43.0 (4.7)	32–51	–	–	–	–	–
Institutionalization ^a	–	–	6.5 (3.4)	1.0–15.0	7.3 (4.5)	0.5–20.0	$t(83) = -0.93, p = .36$
PCL-R total	–	–	18.4 (4.1)	9.5–24.0	29.5 (3.2)	25.0–36.8	$t(83) = -14.00, p < .001$
PCL-R Factor 1	–	–	8.4 (3.1)	3.0–16.0	11.9 (2.8)	6.0–16.0	$t(83) = -5.51, p < .001$
PCL-R Factor 2	–	–	7.8 (3.9)	0.0–15.0	13.9 (2.5)	7.2–18.0	$t(68.9) = -8.57, p < .001$
First guilt Sc-IAT	-0.17 (0.30)	-0.81–0.38	-0.10 (0.51)	-0.94–0.93	-0.04 (0.46)	-1.15–1.35	$F(2, 108) = 0.72, p = .49$
Second guilt Sc-IAT	-0.06 (0.25)	-0.50–0.38	-0.01 (0.26)	-0.75–0.53	-0.02 (0.29) ^b	-0.58–0.75	$F(2, 104) = 0.21, p = .81$
Dominance Sc-IAT	0.09 (0.29)	-0.59–0.57	0.09 (0.31) ^c	-0.59–0.75	0.18 (0.40)	-1.00–0.91	$F(2, 107) = 0.78, p = .46$
GBAI-R Mental Element	–	–	11.5 (9.0) ^c	-2–27	9.5 (7.0) ^c	-7–22	–
GBAI-R Feelings of Guilt	–	–	33.7 (10.5) ^c	8–52	28.8 (12.3) ^c	1–55	–
GBAI-R External Attribution	–	–	-14.4 (8.8) ^c	-27–9	-11.9 (11.3) ^c	-27–14	–
NPI total score	98.5 (18.9)	62–124	99.5 (23.5) ^d	47–144	98.1 (23.0) ^e	49–157	$F(2, 104) = 0.09, p = .92^f$

Note. LSRP = Levenson Self-Report Psychopathy Scale (Levenson et al., 1995). PCL-R = Psychopathy Checklist-Revised (Hare, 2003). Sc-IAT = D measure on Single Category Implicit Association Task (Karpinski & Steinman, 2006). GBAI-R = Gudjonsson Blame Attribution Inventory-Revised (Gudjonsson & Singh, 1989). NPI = Narcissistic Personality Inventory (Raskin & Terry, 1988).

^a Length of institutionalization since the last offense in years.

^b $n = 39$.

^c $n = 41$.

^d $n = 40$.

^e $n = 42$.

^f Controlled for trait anxiety scores.

with consensus meetings before using the PCL-R. Single rater ICCs in a subsample of sixteen interviews (selected from different clinics) were .74, .74, and .76 for Factor 1, Factor 2, and total scores, respectively. When the PCL-R had not been administered, this was done by the first author ($n = 12$), who was also extensively trained. To ensure adherence to the diagnostic criteria, regular meetings were held with the second author (D.P.B.), who has vast experience in administering the PCL-R. Standardized Cronbach's α s for Factor 1, Factor 2, and total scores were .79, .82, and .82, respectively.

2.2.2.2. Dominance Sc-IAT. The degree to which participants associated themselves with dominance was assessed with a Sc-IAT (Karpinski & Steinman, 2006), which is an adaptation of the IAT (Greenwald et al., 1998). The traditional IAT assesses the extent to which stimuli of two target concepts (e.g., *me* and *other*) are associated with stimuli of two attributes (e.g., *good* and *bad*). Participants are instructed to categorize exemplars of the target concepts and attributes using a right or a left response key. When individuals strongly associate a target with an attribute (e.g., *me* and *bad*), responses are thought to be faster when these categories share a response key than when less associated categories (e.g., *me* and *good*) share a response key. The difference in response speed to different combinations of targets and attributes provides an indirect measure of differential association of the two concepts with the attribute (Greenwald et al., 1998). A drawback of the IAT is that the overall score gives a measure of relative association strength (e.g., a high score on the self-concept IAT could be due to relatively strong positive associations with the self and/or due to relatively negative associations with others). The Sc-IAT can be used to circumvent this interpretative ambiguity by assessing association strength with only one target category.

The target category in the dominance Sc-IAT was 'Self' and included personalized words including a participant's first name, last name, date of birth, city, address, and province. Participants were explicitly asked for the information they associated themselves with most. The two attribute categories were dominant (*dominant*) and submissive (*onderdanig*). Attribute words were selected based on a pretest with 40 university students who indicated the degree to which they associated 65 words with both submission and dominance using two Likert scales. Six dominant words were selected based on low submissive and high dominance ratings, whereas the opposite combination was used as a selection criterion for the six submissive words (see Appendix A for these attribute words). Words were matched on approximate word length and number of syllables, resulting in word sets that did not differ in word length ($t[10] = 0.38, p = .72$) or number of syllables ($t[10] = -0.22, p = .83$). Dominant and submissive words did differ significantly in dominance ($t[10] = -21.90, p < .001$), as well as in submissiveness ratings ($t[10] = 15.28, p < .001$).

Following Karpinski and Steinman (2006), the dominance Sc-IAT consisted of a test block and two combined practice/test blocks. In the first practice block (12 trials), the dominance and submissive words had to be attributed to their respective category by pressing either the left or right response key on a button box. Subsequently, participants were presented with two combined blocks that both consisted out of 24 practice trials followed by 48 test trials. In one of these blocks, self-related words had to be categorized under the same response key as dominant attribute words, whereas in the other block, self-related words shared a response key with submissive attribute words. The Sc-IAT was presented on a computer screen with Presentation software. The self-related and attribute categories were presented in the top corners of the screen. The self-related and attribute words were presented on the screen one by one, and participants were instructed to categorize them as quickly and correct as possible. In case of a mistake, a response had to be corrected in order to proceed to the next trial. For half of the participants, the dominant category was presented on the left and the submissiveness category was presented on the right of the screen (and vice versa for the other half of the subjects). Furthermore, the

order in which the self-related words shared a response key with dominance vs. submissiveness was counterbalanced, thus resulting in four different versions of the Sc-IAT. Performance on the Sc-IATs was quantified using the D measure algorithm described by Greenwald, Nosek, and Banaji (2003), which is based on the difference in reaction time between the two combined practice/test blocks. A negative D measure reflects an implicit bias towards associating oneself more with submissiveness, whereas a positive D measure is indicative of a stronger association with dominance.

Split-half reliability was determined by calculating a D measure separately for the odd and even trials of the dominance Sc-IAT. Consistency between these two D measures was $r = .75$ ($r < .001$) (Spearman-Brown corrected). Furthermore, test-retest reliability over two weeks in a subsample of $n = 14$ offenders was $r = .31$ ($p = .28$). Compared with previous research, this split-half reliability is fairly high. Nosek, Greenwald, and Banaji (2007), for example, found a median split-half reliability of .56 across several studies. Earlier research also suggests that the test-retest reliability of IAT measures tends to be considerably lower than their split-half reliabilities, typically ranging between .36 and .41 (for reviews, see Nosek et al., 2007; Schnabel, Asendorpf, & Greenwald, 2008).

2.2.2.3. Guilt Sc-IAT and guilt induction. A Sc-IAT was also used to assess the extent to which participants associated themselves with guilt, using the two attribute categories guilty (*schuldig*) and not guilty (*onschuldig*). Attribute words were selected from a pretest in which the same forty students rated 39 words on a Likert scale from 0 (*not guilty*) to 100 (*guilty*). Five words from both ends of this continuum were selected and matched on the characteristics described above (see Appendix A for these attribute words). Words in both categories did not differ in word length ($t[8] = 0.17, p = .87$) or number of syllables ($t[8] = -0.76, p = .47$), but did differ in the degree to which raters associated them with guilt ($t[4.73] = 9.13, p < .001$). The self-related target words in the guilt Sc-IAT included first name, last name, date of birth, city, and address. The structure of the guilt Sc-IAT was identical to that of the dominance Sc-IAT, except that the first practice block had ten trials and the combined practice/test blocks both consisted out of forty trials, due to the use of a different number of attribute words. For the guilt Sc-IAT, a negative D measure reflects an implicit bias towards associating oneself more with the category 'not guilty' than with 'guilty' (and vice versa for a positive D measure).

As guilt is typically linked to a specific act (Tangney et al., 2007), this moral emotion might not be present continuously. In order to induce guilt and strengthen the hypothesized negative association between psychopathy and implicit guilt, we constructed a questionnaire listing 25 different antisocial behaviors on which participants were asked to indicate whether they would feel guilty had they committed an act (choosing from 'yes', 'I'm not sure', and 'no'). We made sure that this questionnaire included a wide variety of different behaviors (e.g., stealing something, physically hurting someone, setting something on fire, having sex with someone against their will), so that it would contain relevant primes for all participants. This questionnaire was administered following the guilt Sc-IAT (responses on this questionnaire were not taken into any further account). After finishing the antisocial behavior list, participants were presented with the same guilt Sc-IAT a second time. Spearman-Brown corrected split-half reliability for the even and odd trials of the first and second guilt Sc-IAT was $r = .65$ ($p < .001$) and $r = .36$ ($p = 0.02$), respectively. Test-retest reliability over two weeks was $r = .17$ ($p = .56, n = 14$) and $r = .34$ ($p = .23, n = 14$) for the first and second guilt Sc-IATs, respectively.

2.2.2.4. NPI. The Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) is a self-report instrument of overt, grandiose narcissism (Cain et al., 2008). Items are rated on a Likert scale ranging from 1 (*not applicable at all*) to 5 (*highly applicable*). Although the NPI criteria were

formulated based on the DSM-III criteria for NPD (Raskin & Terry, 1988), items that are concerned with leadership qualities (e.g., “I like having authority over other people”) are overrepresented in the NPI (Barelds & Dijkstra, 2010). Furthermore, the NPI is strongly related to measures that capture dominance (e.g., Brown & Zeigler-Hill, 2004), suggesting the NPI to be an appropriate explicit measure to complement our implicit dominance measure with. The NPI has been found to comprise seven factors, including Authority, Self-Sufficiency, Superiority, Exhibitionism, Exploitativeness, Vanity, and Entitlement (Raskin & Terry, 1988). More recent research provides more support for a single-factor solution (Barelds & Dijkstra, 2010), in which one item (22) is dropped. Therefore, we used the 39-item total score, which has shown to have good construct validity in a Dutch sample (Barelds & Dijkstra, 2010). In the current study, Cronbach's α for the 39-item total score was .93, and test–retest reliability over two weeks was $r = .81$ ($p < .05$) in a subsample of $n = 6$ offenders.

2.2.2.5. GBAI-R. The Gudjonsson Blame Attribution Inventory-Revised (GBAI-R; Gudjonsson & Singh, 1989) is a 42-item self-report questionnaire that measures offenders' attribution of blame for criminal offenses. The GBAI-R comprises three factors: a) Mental Element (9 items), which assesses the tendency to blame offenses on impaired mental capacity, e.g., mental illness; b) External Attribution (15 items), referring to the degree to which offenses are ascribed to external factors, like social or environmental pressure (e.g., provocation); and c) Feelings of Guilt (18 items), which measures feelings of remorse about criminal behavior. In the current study, the GBAI-R subscale of main interest concerned Feelings of Guilt. The other two subscales, Mental Element and External Attribution, were taken into account to provide additional information on the potential relationship between psychopathy and guilt, as feelings of guilt are believed to interact with the tendency to attribute blame to external and/or mental influences (Johnsson et al., 2014).

Fifteen GBAI-R items are scored negatively in order to reduce potential response biases. Although the original GBAI-R is rated dichotomously (true/false), we adopted a five-point Likert format, ranging from 0 (*I do not agree at all*) to 5 (*I completely agree*), which yields a reliable measure of blame attribution (Cima, Merckelbach, et al., 2007). Feelings of Guilt correlated negatively with External Attribution ($r = -.44$, $p < .001$), and positively with Mental Element ($r = .39$, $p < .001$). The latter two subscales were not significantly related ($r = -.18$, $p = .10$). These correlations are similar to those found in earlier studies (e.g., Cima, Merckelbach, et al., 2007; Johnsson et al., 2014). Internal consistency was good for Feelings of Guilt ($\alpha = .76$), Mental Element ($\alpha = .74$), and External Attribution ($\alpha = .80$). Furthermore, in a subsample of $n = 7$ offenders, test–retest reliability over two weeks was $r = .38$ ($p = .40$), $r = .93$ ($p < .01$), and $r = .87$ ($p = .01$) for Feelings of Guilt, Mental Element, and External Attribution, respectively.

2.2.3. Covariates

A number of covariates were taken into account, including state and trait anxiety as assessed with the State–Trait Anxiety Inventory (STAI; Spielberger, 1983). Cronbach's α for both STAI subscales was .90. Furthermore, working memory was examined using the Self Ordered Pointing Task (SOPT; Petrides & Milner, 1982). In the SOPT, a 3×4 matrix with pictures is presented on a computer screen. On each of 12 trials, pictures shift arrangement and participants are instructed to click on a picture they have not clicked on during previous trials. Performance was summed over two repetitions of the SOPT. Last, IQ and age were taken into account.

2.3. Procedure

Nonoffenders were recruited using flyers and advertisements in local newspapers. We intentionally did not search for controls at the university in order to keep offenders and nonoffenders comparable

with respect to demographics, like age and education. The nonoffenders were screened over the phone with the LSRP and the SCID I and II, after which they finished the remaining measures at a laboratory at Maastricht University. Offenders were identified with the help of therapists who were informed about the in- and exclusion criteria. Data collection was spread out over different sessions, starting with the PCL-R, the SIDP-IV, and the WAIS-III (if necessary). The remaining measures were administered together with a variety of other tests assessing different emotional constructs which are described elsewhere (e.g., Nentjes, Bernstein, Meijer, Arntz, & Wiers, 2016; Nentjes, Meijer, Bernstein, Arntz, & Medendorp, 2013; Niesten et al., 2015). Measures were presented in counterbalanced order. Subjects were reimbursed with 25 euro for their participation.

Offenders were divided into a nonpsychopathic ($n = 42$) and a psychopathic group ($n = 43$), based on a PCL-R cut-off of 25 (Cooke & Michie, 1999). Although psychopathy is considered to be dimensional in nature (Hare & Neumann, 2005), this division enabled us to include the nonoffenders (for who no PCL-R scores were available) in our analyses.

2.4. Statistical analyses

First, bivariate correlation coefficients were computed between the potential covariates and the dependent measures (dominance Sc-IAT, guilt Sc-IATs, NPI score, and the GBAI-R subscale scores). Covariates were taken into account in subsequent analyses when these were related to the respective dependent variable (at $p < .10$). Group differences were investigated by conducting a one-way ANOVA for each dependent measure with group (nonoffenders, nonpsychopathic offenders, and psychopathic offenders) as between subjects variable. As GBAI-R scores were not available for the control participants, and in order to investigate factor-specific influences, analyses were supplemented with correlation coefficients between the PCL-R (factor and total scores) and the dependent variables. For Factor 1 and Factor 2, these concerned partial correlations, which control for variance shared with the other factor.

3. Results

3.1. Data inspection

Inspection of the data revealed two outliers (± 3.24 SD) on the SOPT and one outlier on the dominance Sc-IAT. These outliers were replaced by a value representing the mean plus or minus 3.24 SD. Next to that, scores on the GBAI External Blame scale were square root transformed in order to reduce deviation from normality.

3.2. Guilt Sc-IATs and GBAI-R

None of the covariates was associated with performance on the guilt Sc-IATs. Analyses did show GBAI-R Feelings of Guilt to be related to age ($r = .19$, $p = .09$), meaning that relatively older offenders reported more guilt. Furthermore, GBAI-R External Attribution was associated with IQ ($r = -.28$, $p = .01$), SOPT performance ($r = -.21$, $p = .07$), and state anxiety ($r = .25$, $p = .02$), meaning that offenders ascribed their offenses to external factors to a higher degree when having a relatively low IQ, a relatively low SOPT score, and/or a relatively high state anxiety level. Age, IQ, and SOPT scores were therefore included in the analyses on these respective GBAI-R scales. One-way ANOVAs indicated controls, nonpsychopathic offenders and psychopaths not to differ in performance on the guilt Sc-IATs (see Table 1). PCL-R total or factor scores also did not significantly relate to performance on these Sc-IATs (Table 2). However, PCL-R total and Factor 1 scores did correlate negatively to the GBAI-R Mental Element score, meaning that the higher the offenders' psychopathy total and Factor 1 level, the less they blamed their crimes on impaired mental capacity. PCL-R Factor 2 was negatively

Table 2
Correlations between PCL-R total and factor scores and dependent variables (within offenders).

	Dominance Sc-IAT ^a	NPI total score ^b	First guilt Sc-IAT ^c	Second guilt Sc-IAT ^d	GBAI-R Mental Element ^b	GBAI-R Feelings of Guilt ^b	GBAI-R External Attribution ^b
PCL-R total score	.16	.02 (.03)	.04	.00	-.23*	-.21 ⁺ (-.21 ⁺)	.08 (.00)
PCL-R Factor 1	.05	-.15 (-.13)	.10	-.06	-.22*	.11 (.09)	.11 (.13)
PCL-R Factor 2	.08	.11 (.15)	-.06	.11	-.14	-.38*** (-.36**)	.08 (-.05)

Note. Parameter estimates in parentheses display the partial correlations between PCL-R scores and NPI total score while controlling for trait anxiety; between PCL-R scores and GBAI-R Feelings of Guilt while controlling for age; and between PCL-R scores and GBAI-R External Attribution while controlling for IQ, executive functioning, and state anxiety. For Factors 1 and 2, partial correlations are depicted which are controlled for variance shared with the other factor. PCL-R = Psychopathy Checklist-Revised. Sc-IAT = D measure on Single Category Implicit Association Task (Karpinski & Steinman, 2006). Positive Sc-IAT scores indicate a stronger self-association with dominance and guilt, respectively. GBAI-R = Gudjonsson Blame Attribution Inventory-Revised (Gudjonsson & Singh, 1989). NPI = Narcissistic Personality Inventory (Raskin & Terry, 1988).

^a $n = 84$.

^b $n = 82$.

^c $n = 85$.

^d $n = 81$.

⁺ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

associated with GBAI-R Feelings of Guilt. Offenders relatively high in Factor 2 thus reported less feelings of guilt.

3.3. Dominance Sc-IAT and NPI

STAI trait anxiety was associated with the NPI score ($r = .21, p = .03$) and was therefore taken into account as a covariate in the subsequent analyses. None of the other covariates was significantly associated with the NPI score or performance on the dominance Sc-IAT (all $ps > .10$). ANOVAs showed that groups did not differ in their NPI score or in performance on the dominance Sc-IAT (see Table 1). Correlational analyses indicated that PCL-R total and factor scores were not associated with either the NPI score or performance on the dominance Sc-IAT.

4. Discussion

The current study examined the association between psychopathy and two constructs figuring prominently in conceptualizations of this disorder, being guilt and dominance, using both indirect and explicit assessment. Strikingly, the lifestyle/antisocial component of psychopathy was associated with reduced guilt on our explicit measure, whereas psychopathy and implicit guilt appeared unrelated. Regarding dominance, dimensional analyses did not reveal an association between psychopathy and this construct on either an implicit or explicit level. Last, no overall group differences were observed between nonoffenders, nonpsychopathic offenders and psychopathic offenders in the current study.

4.1. Psychopathy and guilt

Psychopathy was thus not characterized by reduced implicit guilt, yet did show to be negatively related to explicitly reported guilt. Our findings on self-reported guilt are in line with earlier studies in which PCL-R assessed psychopathy was also associated with a reduced experience of guilt concerning committed crimes (Johnsson et al., 2014; Weizmann-Henelius, Sailas, Viemerö, & Eronen, 2002). Interestingly, this association is not consistently carried by one psychopathy factor over the current and previous studies, with some research showing a stronger relationship between guilt and Factor 1 (Weizmann-Henelius et al., 2002), whereas in other studies, this association is merely explained by Factor 2 (Johnsson et al., 2014). In the current study, guilt was related to Factor 2, indicating that relatively antisocial offenders explicitly stated to feel less guilty about their crimes.

Our findings on self-reported guilt suggest that offenders high in antisocial traits seem to be incapable or unmotivated to mask their undesirable traits, including a lack of guilt. Recent research by Watts et al. (2016) is in line with this assumption, demonstrating that response

distortion seems to have minimal effects on the validity of self-reported psychopathy in the prediction of external criteria relevant to psychopathy, such as institutional infractions. A recent study in the current sample also parallels these results, showing Factor 2 to be related to reduced social desirability (Niesten et al., 2015). The latter finding matched several previous studies and also seems to indicate that highly antisocial offenders show no motivation to deliberately downplay their undesirable characteristics when being explicitly asked to report on them.

The current results support a notion that is crucial to psychopathy, being that this disorder is characterized by a reduced experience of moral emotions. Although a lack of guilt is more central to descriptions of Factor 1, the association between Factor 2 and reduced guilt might be explained by the extensive overlap that this latter factor has with ASPD. That is, a lack of remorse is explicitly mentioned as a diagnostic criterion for this PD (APA, 2000). Factor 1 not being related to explicit guilt was consistent with our hypothesis, and could reflect the dishonesty associated with this psychopathy component (Hare, 2003). Future research on whether this is the case (and under which conditions) is therefore warranted. In any case, the lack of a significant relationship between Factor 1 and self-reported guilt does not seem to be due to scale unreliability, as Factor 1 did have good psychometric properties. Its validity is also supported by the negative association between this factor and the tendency to blame impaired mental capacity for criminal behavior. This same relationship was also found by Johnsson et al. (2014) and Weizmann-Henelius et al. (2002). Potentially, offenders high in the interpersonal/affective features of psychopathy do not tend to ascribe their crimes to a loss of mental control, as this psychopathy component is related to instrumental, calculated criminality, rather than impulsive, reactive offending (Reidy, Shelly-Tremblay, & Liliensfeld, 2011). These individuals might thus rightfully claim that their crimes were not due to a loss of control.

The finding that psychopathy was not associated with implicit guilt was not in line with our expectations and contrasts previous research that revealed guilt-specific aberrances in psychopathy using an indirect measure (Cima, Tonnaer, et al., 2007). A potential explanation for this unexpected finding could be that offenders deliberately tried to influence their performance during the Sc-IATs. Although performance on indirect measures is harder to 'fake' than on direct measures, indirect assessment is not considered completely immune to deliberate strategies (De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009). However, as we did find an association between Factor 2 of psychopathy and explicit guilt, other accounts might be more plausible. One explanation could be that even those offenders who are prone to feel bad about their crimes might not always feel guilty, as moral emotions are not necessarily present continuously (Tangney et al., 2007). In other words, the experience of guilt might have more of a state-like character. It might

therefore be necessary to first evoke self-associations on an affective level in order to detect potential psychopathy-specific deficits. We did attempt to induce more guilt by letting participants fill out a questionnaire listing a variety of antisocial behaviors, yet this approach might not have been affect-provoking enough. Future research on moral emotions might want to make use of more intense primes, like letting offenders recall and report on personal life events that evoked guilt, or by showing film fragments depicting guilt-related scenes. This reasoning is consistent with previous studies such as that by Van Goethem, Scholte, and Wiers (2010), who found that children's bullying behavior was predicted by implicit bullying attitudes, yet only when the assessment of these attitudes was preceded by a movie on bullying.

In order to shed light on these possibilities, further research on the malleability of implicit measures in forensic contexts, as well as the state dependency of (moral) emotions in criminal offenders is needed. Such studies might want to complement reaction time-based tests such as our Sc-IAT with other indirect assessment strategies, like psychophysiological recording. A study by Levenston, Patrick, Bradley, and Lang (2000), for example, demonstrated psychopathy to be related to a lack of startle responding when primed with victim scenes, stressing the added value of such psychophysiological approaches in research on morality in psychopathy.

4.2. Psychopathy and dominance

In contrast to our expectations, psychopathy appeared to be unrelated to both implicit and explicit dominance in the current study. These results are somewhat surprising and are not in line with previous research that shows that the observed interpersonal behavior of psychopathic individuals is characterized by heightened levels of dominance and grandiosity (Gullhaugen & Nøttestad, 2011; Verona et al., 2001; Vitacco & Kosson, 2010). Findings are also at odds with studies in which psychopathy is associated with an increased level of self-reported dominance (Kosson et al., 1997; Schoenleber et al., 2011). It has to be noted though, that the associations between psychopathic symptoms and self-reported dominance are generally weak in nature. Correlations between psychopathy and observer-rated dominance tend to be larger in magnitude over different studies.

The fact that we did not observe a significant association between psychopathy and self-reported dominance could be due to different reasons. First, psychopathy might be associated with an unwillingness to explicitly admit a dominant self-view. Such an explanation fits with conceptualizations in which psychopaths are described as insincere, pathological liars (Cleckley, 1941; Hare, 2003). However, it was stressed that obtained data would only be used for research purposes, and highly antisocial offenders did not seem to be hesitant to admit reduced feelings of guilt about their crimes. A different interpretation might therefore be that psychopathy was simply characterized by a lack of insight, which is typical for all personality disordered individuals, including those with a high level of antisocial traits (Millon & Davis, 2000). This notion is in line with previous research that demonstrates that forensic patients tend to underreport dominance-related traits, such as narcissistic personality disorder symptoms, grandiosity and self-aggrandizing behavior, when compared to their therapists' reports on these traits (Keulen-de Vos et al., 2011; Lobbestael et al., 2009). An alternative interpretation comes from a growing body of literature indicating the NPI to mainly cover the adaptive sides of narcissism, such as leadership and positive self-esteem (Cain et al., 2008). Potentially, psychopathy is characterized by more maladaptive aspects of dominance that are not tapped by the NPI.

In the current study, we also did not observe stronger self-dominance associations on an implicit level in relatively psychopathic offenders. Although indirect assessment methods are believed to be less dependent on the capacity for introspection (Roefs et al., 2011), the Sc-IAT used in the current study still assessed associations from the offender's point of view. It could be that dominance is just not

very pertinent to the self-concept of relatively psychopathic offenders, and that the dominant behavior of these individuals occurs in a more reflexive manner. That is, psychopathic offenders might behave in a boundary-violating and overruling way, yet not see themselves as more dominant than others on either an implicit or explicit level. Another possibility could be that our dominance Sc-IAT did not appropriately assess self-dominance associations. Although the internal consistency of our IATs was adequate, test-retest reliability was somewhat lower.

4.3. Limitations, conclusions, and future directions

Some limitations have to be taken into account when considering our results. First, our research sample consisted primarily of patients in forensic maximum security hospitals, supplemented by a number of prison inmates. This might limit the generalizability of these findings to other populations as our results primarily apply to personality disordered forensic patients. Nonetheless, a broad range of psychopathy was represented, making our sample well-suited to investigate the correlates of this disorder. Second, our guilt Sc-IAT might not have been administered under ideal circumstances. As reported earlier, offenders' implicit associations with guilt might have been stronger had we used, for example, a movie prime. Third, we might have assessed an adaptive type of narcissism with our explicit dominance measure, rather than the type of 'hostile' dominance that might be related to psychopathy. However, our choice for the NPI was motivated by its extensive validation and its coverage of dominance-related concepts such as authority and superiority (Cain et al., 2008).

In summary, the present investigation is – to our knowledge – the first to examine dominance and guilt in criminal psychopathy using both indirect assessment and self-report. Regarding dominance, no significant associations were observed with psychopathy on either an implicit or explicit level, raising questions about the insight that relatively psychopathic offenders have in the way they interact with others. Psychopathy was also not significantly related to implicit self-guilt associations, yet offenders relatively high in Factor 2 did report reduced feelings of guilt on an explicit level. These findings imply that moral emotions are relevant to understanding the antisocial component of psychopathy. Next to that, results suggest that apprehension about antisocial offenders' truthful responding concerning feelings of guilt might not be warranted, at least in research contexts. Taken together, the current study illustrates that the question of whether psychopaths' self-reported statements reflect their actual functioning is not easily answered. Future research should further develop and adopt multi-method approaches, including self-report, observer-based and psychophysiological measures to study psychopathic offenders' capacity and willingness to self-disclose. These studies should investigate which (combinations of) assessments provide the best index of the external correlates of psychopathy. In doing so, it should be examined which methods yield the strongest predictors of clinically relevant outcomes like recidivism and treatment progress.

Appendix A

A.1. Dominance Sc-IAT attribute stimuli

Dominant (*dominant*): leader (*leider*), ruler (*overheerser*), power (*macht*), dominant (*dominant*), bossy (*bazig*), ruler (*gezaghebber*).

Submissive (*onderdanig*): slave (*slaaf*), inferior (*minderwaardig*), humiliated (*vernederd*), weak (*zwak*), submissive (*onderdanig*), vulnerable (*kwetsbaar*).

A.2. Guilt Sc-IAT attribute stimuli

Guilty (*schuldig*): bad conscience (*slecht geweten*), guilty (*schuldig*), guilt (*schuldgevoel*), shame (*schaamte*), I'm sorry (*het spijt me*).

Not guilty (*onschuldig*): good conscience (*goed geweten*), innocence (*onschuld*), not guilty (*onschuldig*), benevolent (*goedaardig*), innocent (*onschuldige*).

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