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*A meta-analysis*

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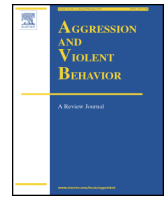
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# The relation between self-conscious emotions and delinquency: A meta-analysis



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## ABSTRACT

Self-conscious emotions are expected to be related to delinquency, as they guide moral decision making. In the current study, two separate multilevel meta-analyses were performed to examine the overall relation between guilt, shame and delinquency. In addition, possible moderating factors were examined. In total, 25 studies with 24 independent samples, reporting on 75 effect sizes, were included. The results showed significant negative associations between guilt and delinquency ( $r = -.278$ ), and between shame and delinquency ( $r = -.130$ ), indicating that higher levels of guilt and shame were related to less delinquency. Implications for theory and practice concerning the role of self-conscious emotions in delinquency and offender treatment are discussed.

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## 1. Introduction

When it comes to the understanding of delinquent behaviors, cognitive elements of moral development, such as moral judgment, have been studied extensively (Stams et al., 2006). On the last few decades, much attention has been given to the role of emotions in immoral behavior. A range of moral emotions are considered relevant in this regard, with empathy, guilt, and shame among the most studied. Although all distinctive in nature, they are highly associated (Hoffman, 1998; Trivedi-Bateman, 2015; Tangney, 1991). More precisely,

Tangney (1991) assumed that true interpersonal guilt relies both on the ability to identify, share and respond to someone's distress, i.e., being empathic (Cohen & Strayer, 1996), and on the understanding of one's own role that has led to the distress. This self-reflective and evaluative state in combination with an understanding of moral rules and standards distinguishes guilt and shame from empathy. Therefore, guilt and shame are generally referred to as self-conscious emotions (Lewis, 2000).

Self-conscious emotions are expected to be related to a range of moral behaviors, including delinquency. There is general agreement that self-conscious emotions guide moral decision making, and therefore influence moral behavior (Eisenberg, 2000; Pizarro, 2000). People continuously evaluate their thoughts and actions from their personal moral reference of values and standards (Lewis, 1991; Schalkwijk, 2015). Negative self-conscious emotions, such as guilt and shame, are evoked when the evaluations of actions or thoughts are in conflict with the person's moral values and standards. Since negative self-evaluations are hurtful, people avoid behaviors that evoke negative self-conscious emotions (Schalkwijk, 2015; Tangney & Dearing, 2002a; Tangney, Stuewig, & Mashek, 2007). On the other hand, behaviors can be immediately reinforced if followed by positive self-conscious emotions, such as pride (Tracy & Robins, 2007; Eisenberg, 2000). As a result of this regulating effect on moral behavior, self-conscious emotions often affect antisocial behaviors, including delinquency (Eisenberg, 2000; Gold, Sullivan, & Lewis, 2011; Jackson, 2009; Murphy & Harris, 2007; Ribeiro da Silva, Rijo, & Salekin, 2015; Schalkwijk, 2015; Stuewig & Tangney, 2007; Tangney, Stuewig, & Hafez, 2011; Tibbetts, 2003).

To date, no systematic reviews or meta-analyses describing the relation between self-conscious emotions and delinquency are available. This lack is remarkable as more and more research is focused on the identification of criminogenic risk factors for delinquency and recidivism, to provide leads for treatment and offender therapy (Andrews & Bonta, 2010). Self-conscious emotions are of particular interest in this regard, as they are assumed to be critical in the rehabilitation of offenders (Tangney et al., 2011) by helping the offender to take responsibility for his acts and to repair the harm done to victims or society (Braithwaite, 1989). Therefore, the aim of the current meta-analysis was to systematically review the literature, assess the strength of the relation between self-conscious emotions and delinquency, and to examine factors that could moderate this relation. Self-conscious emotions include various emotions, such as shame, guilt, remorse, regret, pride, embarrassment and humiliation (Tracy, Robins, & Tangney, 2007). Since research into the relation between self-conscious emotions other than guilt and shame is sparse, only guilt and shame will be addressed in the present study. Notably, remorse and regret should be considered as central to guilt, because the experience of guilt is intrinsically connected to the wish to have behaved differently (Tangney et al., 2011), whereas embarrassment should be considered a distinct emotion if compared to shame and guilt (Keltner & Buswell, 1996).

Although guilt and shame are both negative self-conscious emotions, they are not equally linked to delinquency throughout literature (Eisenberg, 2000; Stuewig & Tangney, 2007; Tangney et al., 2011). The key difference according to Lewis (1971) is that guilt relates to the evaluation of *behavior*, whereas shame relates to the evaluation of one's *whole being*. Guilt is an emotion that mostly emerges within an interpersonal context, caused by an action that inflicts harm, loss, distress or pain on (significant) others (Baumeister, Stillwell, & Heatherton, 1994). In these situations there is often a possibility to repair the damage by helping the other person or expressing feelings of guilt and remorse. Social bonds between the offender and the victim can become stronger after these reparative actions and help prevent a negative self-evaluation (Baumeister et al., 1994; Stuewig & Tangney, 2007). Experiencing feelings of guilt encourages people to internalize the blame of the inflicted harm on others and to take responsibility of their actions, resulting in restorative behaviors. Since guilt-proneness

goes together with more internalized blaming and higher levels of empathic functioning (Mandel & Dhami, 2005; Stuewig, Tangney, Heigel, Harty, & McCloskey, 2010), it is expected that higher levels of guilt feelings are associated with less delinquency (Parrott & Strongman, 1984; Van Langen, Wissink, Van Vugt, Van der Stouwe, & Stams, 2014).

The relation between shame and delinquency is equivocal (Stuewig & Tangney, 2007). Since the feeling of shame is a negative self-evaluation of one's whole being, shame can be an extremely painful emotion (Elison, Garofalo, & Velotti, 2014; Tangney et al., 2011). Therefore, the anticipation of shame-feelings has a strong inhibiting effect on delinquent behaviors; predicting that a certain behavior will lead to shame feelings should cause people to refrain from that behavior (Schalkwijk, 2015; Tangney & Dearing, 2002a; Tangney et al., 2007). On the contrary, Lewis (1971) proposed that shame may lead to such strong feelings of worthlessness and powerlessness that the self-concept needs to be protected from those negative self-evaluations. The defense mechanism resulting from this need is to externalize the blame of the actions and behaviors (Schalkwijk, 2015; Stuewig et al., 2010; Tracy & Robins, 2003). The anger that comes with the externalizing blame has often been related to aggressive behaviors (Harper, Austin, Cercone, & Arias, 2005; Tangney et al., 2011). The pathway from shame to externalizing the blame, anger, and antisocial behavior has mainly been described for aggression and not for delinquency. However, it can be argued that since an external locus of control is associated with delinquency (Parrott & Strongman, 1984), this path may also hold for delinquent behaviors. Altogether, it is expected that the relation between delinquency and guilt or shame differs. A protective role of guilt regarding delinquency is hypothesized. For shame, the relation with delinquency is less clear. Therefore, two meta-analyses will be conducted, assessing the relation between guilt and delinquency, and shame and delinquency.

The strength of the relation between self-conscious emotions and delinquency may be influenced by other factors, such as characteristics related to self-conscious emotions, delinquency, studies, and samples. Considering factors related to self-conscious emotions, the measurement of guilt and shame may possibly moderate the relation with delinquency (Else-Quest, Higgins, Allison, & Morton, 2012; Kim, Thibodeau, & Jorgensen, 2011). Some instruments measure self-conscious emotions in specific contexts (i.e., contextual guilt and shame). For example, the Test of Self-Conscious Affect (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000) presents specific scenarios in which a person has committed an immoral act, upon which the respondent indicates the likelihood of reactions that represent the experience of guilt and shame. Other instruments (for example, the Personal Feelings Questionnaire-2; Harder & Zalma, 1990) measure self-conscious emotions independent of context (i.e., generalized self-conscious emotions), for example, by asking respondents about the frequency of guilt and shame experiences. Further, measures of guilt and shame are often correlated (Stuewig et al., 2015; Tangney, 1996), making it difficult to assess the unique influence of guilt and shame on delinquency. However, as we expect that guilt is stronger associated with delinquency than shame, "shame-free" guilt may show stronger associations with delinquency than measures of guilt that include shame. Thus, whether a study controls for the covariance between guilt and shame could moderate the relation between self-conscious emotions and delinquency.

Considering factors related to delinquency, one of the possible moderators is the type of delinquency (Stuewig & Tangney, 2007; Stuewig et al., 2010; Tangney et al., 2011). We would expect a moderating effect of general versus violent delinquency, because there are some differences between delinquency and aggression in the mechanisms underlying the relation with self-conscious emotions, especially for shame (Stuewig & Tangney, 2007; Tangney et al., 2011). The associations between experiencing shame, anger, and aggressive behavior (Stuewig et al., 2010; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996) could implicate that shame is stronger related to violent delinquency than to general delinquency. Considering sample

characteristics, gender may be an important moderator too. In adolescence and adulthood, small gender differences have been found in guilt and shame (Else-Quest et al., 2012). Up until puberty, research has found little differences between the extent to which boys and girls experience self-conscious emotions. In puberty, however, differences become more visible. Young people of both sexes become somewhat less prone to experience self-conscious emotions, with males becoming less so than females (Bybee, 1998; Else-Quest et al., 2012). Also, Tibbetts (2003) and Schalkwijk, Stams, Stegge, Dekker, and Peen (2014) found different relations between self-conscious emotions and delinquency for males and females. Age is an important sample characteristic, because Shulman, Cauffman, Piquero, and Fagan (2011) showed that moral disengagement in convicted juveniles tends to decline over time, and with it, offending.

The main question that will be addressed in the current meta-analysis is how strongly guilt and shame are related to delinquency. Further, the possible moderating effects of characteristics of self-conscious emotions, delinquency, studies, and samples will be examined.

## 2. Methods

### 2.1. Selection of studies

All studies available until January 2016 addressing the relation between self-conscious emotions and delinquency were included in the current meta-analysis. The electronic databases Ovid (including ERIC), PiCarta, Academic Search Premier, Web of Science, ScienceDirect, Google Scholar, and Doc-Txt were searched using the following search string: guilt, shame, TOSCA, moral emotion, self-conscious emotion or Tangney, in combination with crime, criminal, delinq\*, or offen\*. Furthermore, references sections of review articles and important articles about the relation between self-conscious emotions and delinquency were inspected for qualifying studies. Finally, we corresponded with relevant authors to obtain unpublished manuscripts, articles in press, and dissertations.

For the current meta-analysis, multiple inclusion criteria were formulated. First, only studies that examined the relation between self-conscious emotions and delinquency were included. Second, self-conscious emotions had to be defined as either shame or guilt. Finally, delinquency was operationalized as criminal behavior. Studies that examined deviant behavior other than delinquency (for example aggression or psychopathy) and studies measuring criminal intentions were excluded.

The initial search resulted in 45 manuscripts. Finally, 25 studies met the inclusion criteria. Two studies (Tangney, Stuewig, & Martinez, 2014; Tangney, Stuewig, Mashek, & Hastings, 2011) had dependent samples, and were given the same study number. Thus in total, 24 independent samples were included. Table 1 provides an overview of the included studies and their characteristics. Included studies in the meta-analysis are marked with \* in the references.

### 2.2. Coding and moderators

Included studies were coded according to the guidelines of Lipsey and Wilson (2001). Self-conscious emotions (i.e., guilt and shame) were the independent variable. It was coded whether state or trait self-conscious emotions were measured in the study (Else-Quest et al., 2012; Tibbetts, 2013). Further, it was coded whether the study controlled for the covariance between guilt and shame. For guilt, we coded whether the instrument measured generalized, context-legitimate, and context-maladaptive guilt, according to the definitions and classifications of Kim et al. (2011). None of the studies measured context-maladaptive guilt, and therefore the moderator analysis of the relation between guilt and delinquency was only performed on generalized versus context-legitimate guilt. For shame, we coded whether the instrument measured contextual or generalized shame, and whether the instrument measured internal or external shame, according to the categorization by Kim et al. (2011). As only one study (Svensson, 2004) measured external shame, we were not able to perform analyses on this possible moderator. Delinquency was coded as the dependent variable. Whether the study used the dependent variable delinquency

**Table 1**  
Characteristics of included studies.

Author (Year)	N	IV	Peer review	IF	Design	Informant	Continent	Type offence	Sex	Ethnic Min.	Age	Type sample
Cohen, Wolff, Panter, and Insko (2011)	862	Both	Yes	5.51	Cross	Self-rep	NA	General	Mixed	.25	>18	Comm
Farmer and Andrews (2009)	116	Shame	Yes	0.68	Cross	Official	Europe	General	Male	–	>18	Offend
Ferrer et al. (2013)	128	Guilt	Yes	0.84	Cross	Official	Europe	General	Male	.23	<18	Offend
Ferwerda, Leiden, Van Arts, and Hauber (2006)	824	Shame	No	–	Long	–	Europe	General	Mixed	.23	<18	Offend
Gold et al. (2011)	112	Shame	Yes	2.34	Cross	Self-rep	NA	Violent	Mixed	.61	<18	Offend
Hosser, Windzio, and Greve (2008)	1243	Both	Yes	1.66	Long	Official	Europe	General	Male	–	>18	Offend
Huesmann, Leonard, and Dubow (2002)	332	Guilt	Yes	1.48	Long	Official	NA	Both	Male	.04	<18	Comm
Jackson, Blackburn, Tobolowsky, and Baer (2011)	124	Both	Yes	–	Long	Self-rep	NA	Violent	Mixed	.40	>18	Offend
Koolhof, Loeber, Wei, Pardini, & D'Escury, 2007	430	Guilt	Yes	1.48	Cross	Self-rep	NA	General	Male	–	<18	Offend
LeBel, Burnett, Maruna, and Bushway (2008)	126	Shame	Yes	0.93	Long	Official	Europe	General	Male	.17	>18	Offend
Murphy and Harris (2007)	652	Guilt	Yes	1.53	Long	Self-rep	Europe	General	Mixed	–	>18	Comm
Mityagin (1986)	78	Guilt	No	–	Cross	Official	NA	General	Male	–	>18	Offend
Robinson, Roberts, Strayer, and Koopman (2007)	124	Both	Yes	1.38	Cross	Official	NA	General	Male	.49	<18	Offend
Schalkwijk et al. (2014)	334	Both	Yes	1.08	Cross	Self-rep	Europe	General	Mixed	.35	<18	Offend
Spice (2010)	97	Both	No	–	Long	Self-rep	NA	Both	Mixed	.45	<18	Offend
Spivak, Fukushima, Kelley, and Sanford-Jenson (2011)	484	Shame	Yes	0.77	Cross	Self-rep	NA	General	Mixed	.23	>18	Offend
Stouthamer-Loeber, Loeber, Wei, Farrington, and Wikström (2002)	792	Guilt	Yes	5.23	Long	Self-rep	NA	General	Male	–	<18	Comm
Stuewig and McCloskey (2005)	279	Both	Yes	2.71	Long	–	NA	General	Mixed	.46	<18	Comm
Stuewig et al. (2015)	258	Both	Yes	2.02	Long	Self-rep	US	General	Mixed	–	<18	Comm
Svensson (2004)	979	Shame	Yes	0.93	Cross	Self-rep	Europe	General	Mixed	.27	<18	Comm
Svensson, Weerman, Pauwels, Bruinsma, and Bernasco (2013)	843	Both	Yes	1.14	Cross	Self-rep	Europe	General	Mixed	.47	<18	Comm
Tangney, Stuewig, Mashek et al. (2011), Tangney, Stuewig and Hafez (2011)	550	Both	Yes	1.66	Cross	Official	NA	Both	Mixed	.64	>18	Offend
Tangney et al. (2014)	446	Both	Yes	4.43	Long	Both	NA	General	Mixed	.65	>18	Offend
Tibbetts (2003)	224	Both	Yes	0.53	Cross	Self-rep	NA	General	Mixed	–	>18	Comm

Note. N = number of participants; peer review = published in peer reviewed article yes/no; IF = impact factor of journal; design = cross-sectional or longitudinal; Informant = informant of delinquency measure; Continent = location of study; IV = independent variable; Ethnic min. = proportion non-Caucasian; Cross = cross-sectional design; Long = longitudinal design; Self-rep = self-report; Official = data from official records; NA = North America; <18 = mean age below 18 years old; >18 = mean age above 18 years old; Offend = offender sample; Comm = community sample.

or recidivism was coded as a moderator. Further, it was coded whether the dependent variable was general or violent delinquency.

Finally, various study and sample characteristics with a potential moderating effect on the relation between guilt and shame, and delinquency were identified. Study characteristics added to the moderator analysis were publication year, whether the study was peer reviewed or not, impact factor of the journal in which the study was published, the design of the study (cross-sectional vs. longitudinal), whether delinquency was measured through self-report or official records, and the continent of the study (Europe vs. North America). Sample characteristics were the proportion of ethnic minority groups in the sample, age group (below the age of 18 vs. above age of 18), type of sample (offender vs. community sample), and sex (all male, all female, or mixed sample). Only one study (Svensson, 2004) reported on effect sizes for a female-only sample, so in the moderator analysis we combined the categories female-only and mixed sample into one category.

### 2.3. Calculation and analysis of effect sizes

Two separate meta-analyses were conducted to assess the relation between guilt and delinquency, and shame and delinquency. For the effect size, correlation coefficients were calculated using formulas from Lipsey and Wilson (2001). All correlation coefficients were drawn from bivariate relations or from partial correlations that controlled for the covariance of guilt and shame. Negative effect sizes indicate that higher levels of self-conscious emotions are related to less delinquency. An effect size was coded as zero in case the study reported non-significant results without providing statistics (Lipsey & Wilson, 2001). The continuous moderators publication year, impact factor and proportion of participants with an ethnic minority background were centered on their means. For categorical variables, dichotomous dummy variables were created. There were no outliers in effect sizes ( $>3.29$  SD from the mean; Tabachnik & Fidell, 2007) identified in the meta-analyses.

Multiple studies reported on both violent and general delinquency, used more than one questionnaire to assess self-conscious emotions, or used a combination of self-reported and official reported data on delinquency. This resulted in multiple effect sizes per study. It is possible that the effect sizes from the same study are more alike than effect sizes from other studies. The assumption of independent effect sizes underlying traditional meta-analytic methods was therefore violated (Hox, 2010; Lipsey & Wilson, 2001). We applied a multilevel approach to the current meta-analysis in order to deal with the interdependency of effect sizes (Cheung, 2014; Van den Noortgate & Onghena, 2003). A three-level random effects model was used to account for the three levels of variance, including the sampling variance for each effect sizes (level-one), the variance between effect sizes within studies (level-two), and the variance between studies (level-three) (Wibbelink & Assink, 2015). We used likelihood-ratio-tests to compare the deviance scores of the full model and the models without variance parameters on level two or three to determine if the level-two and -three variances were significant, indicating heterogeneous effect sizes. In case the effect sizes are considered to be heterogeneous, we proceeded to moderator analysis, since the differences between the effect sizes may be explained by characteristics related to self-conscious emotions, delinquency, studies, and samples. The current meta-analysis was conducted in R, using the metafor-package, employing the restricted maximum likelihood estimation and the Knapp and Hartung-method (Viechtbauer, 2010; Weisz et al., 2013; Wibbelink & Assink, 2015).

### 2.4. File drawer bias

In meta-analyses, the aim is to include all studies previously conducted that meet the inclusion criteria (Lipsey & Wilson, 2001). However, some studies may not have been published due to non-significant or unfavorable results, and therefore difficult to locate. This may result in

the so-called “file drawer bias”, and can lead to stronger estimations than the true effect size (Rosenthal, 1995). First, we tested for funnel plot asymmetry by regressing the standard normal deviate (effect size divided by standard error) against the effect size's precision (inverse of the standard error) in SPSS (Egger, Davey Smith, Schneider, & Minder, 1997). In case Egger's test was significant, we proceeded to trim-and-fill-procedure (Duval & Tweedie, 2000). Finally, we calculated Rosenthal's fail-safe number in R. This number is an estimation of how many studies would have been included to change the possible significant association in this current study into a non-significant result. In case the fail-safe number is larger than the critical value of  $5 * k + 10$ , in which  $k$  is the number of effect sizes in current meta-analysis, it can be concluded that a file drawer bias is unlikely (Rosenthal, 1991).

## 3. Results

To assess the relation between guilt, shame and delinquency, two separate meta-analyses were conducted. The results of each meta-analysis are described below. Table 2 shows the overall relation between guilt and delinquency, and shame and delinquency.

### 3.1. Overall relation between guilt and delinquency

The meta-analysis on the relation between guilt and delinquency contained 17 independent studies ( $k$ ), reporting on 35 effect sizes (#ES), and a total sample of  $N = 7796$  subjects. A small, significant relation was found between guilt and delinquency ( $r = -.278$ ; 95% CI =  $-.459$  to  $-.076$ ;  $p < .01$ ), indicating that higher levels of experiencing guilt are associated with less delinquency.

When checking for publication bias, Egger's test was not significant ( $t = 0.452$ ,  $p > .05$ ), indicating that there was no funnel plot asymmetry (Egger et al., 1997). Therefore, we did not execute the trim-and-fill-procedure. Rosenthal's fail-safe number was 10185, indicating that more than 10185 effect sizes with a value of zero had to be found in other studies to reduce the significant overall result in the current meta-analysis into a non-significant result. The fail-safe number was larger than the critical value of the current study ( $5 * 35 + 10 = 185$ ). Together, we concluded that a file drawer bias was unlikely (Egger et al., 1997; Rosenthal, 1991).

Concerning the heterogeneity of the effect sizes, the likelihood-ratio-test on the third level of variance showed that there was significant variance present between studies. On the second level the likelihood-ratio-test showed significant variance as well, indicating that there is variance between effect sizes within studies. Since the variances on level three and level two were significant, we concluded that there is heterogeneity among the effect sizes that may be explained by characteristics of shame, delinquency, studies and samples. Therefore, we conducted moderator analyses.

### 3.2. Moderator analyses on the relation between guilt and delinquency

Table 3 presents the results of the moderator analyses on the relation between guilt and delinquency. The type of guilt (trait vs. state, and generalized vs. contextual-legitimate), and the type of delinquency (general vs. violent, and delinquency vs. recidivism) did not significantly moderate the relation between guilt and delinquency. A moderating trend was found for whether the study controlled for the covariance of guilt and shame. Studies measuring “shame-free” guilt tended to show stronger associations with delinquency, than studies who did not control for the covariance of guilt and shame.

Considering study characteristics, the type of delinquency measure (self-report vs. official records) had a moderating effect on the relation between guilt and delinquency. Stronger relations between guilt and delinquency were found for studies using self-report as a measure for delinquency. Publication year, whether the study was peer reviewed or not, the impact factor of the journal in which the study was

**Table 2**  
Overall relation between self-conscious emotions and delinquency.

Outcome	<i>k</i>	#ES	Mean <i>r</i>	95% CI	<i>p</i>	$\sigma^2_{\text{level2}}$	$\sigma^2_{\text{level3}}$	% Var. level 1	% Var. level 2	% Var. level 3
Guilt	17	35	-.278	-.459; -.076	0.009**	0.004*	0.176***	1.4	2.2	96.4
Shame	17	40	-.130	-.235; -.022	0.019*	0.011***	0.039***	4.9	20.1	75.0

Note. *s* = number of studies; *k* = number of effect sizes; CI = confidence interval; mean *r* = mean effect size (*r*); CI = confidence interval; % var = percentage of variance explained;  $\sigma^2_{\text{level2}}$  = variance between effect sizes within the same study;  $\sigma^2_{\text{level3}}$  = variance between studies.

\* *p* < .05.

\*\* *p* < .01.

\*\*\* *p* < .001.

published, the design of the study, and the continent of the study did not significantly influence the strength of the association between guilt and delinquency. Also, no sample characteristics were moderating factors of the relation between self-conscious emotions and delinquency. Sex, the proportion of participants from ethnic minority groups in the sample, age group, and the sample type (offender samples vs. community samples) did not moderate the relation between self-conscious emotions and delinquency.

**Table 3**  
Moderator effect of relation between feelings of guilt and delinquency.

Moderator variables	<i>k</i>	#ES	$\beta_0$ (mean <i>r</i> )	$t_0$	$\beta_1$	$t_1$	<i>F</i> ( <i>df</i> <sub>1</sub> , <i>df</i> <sub>2</sub> )
<i>IV and DV characteristics</i>							
Type of guilt	17	35					<i>F</i> (1,33) = 0.015
Trait (RC)			-.281	-2.736			
State			-.270	-2.166*	.011	0.122	
Type of guilt	17	35					<i>F</i> (1,33) = 1.337
Generalized (RC)			-.198	-1.549			
Contextual legitimate			-.316	-2.894**	-.125	-1.156	
Delinquency type	17	35					<i>F</i> (1,33) = 0.032
General (RC)			-.277	-2.747**			
Violent			-.288	-2.534*	-.011	-0.177	
Delinquency type	17	35					<i>F</i> (1,33) = 1.717
Delinquency (RC)			-.258	-2.494*			
Recidivism			-.335	-3.039**	-.084	-1.310	
Controlled for covariance shame	17	35					<i>F</i> (1,33) = 3.741 <sup>+</sup>
No (RC)			-.262	-2.475*			
Yes			-.387	-3.294**	-.125	-1.934 <sup>+</sup>	
<i>Study characteristics</i>							
Publication year	17	35	-.279	-2.697*	.000	-0.035	<i>F</i> (1,33) = 0.001
Impact factor	14	27	-.297	-2.436*	-.031	-1.868 <sup>+</sup>	<i>F</i> (1,25) = 3.489 <sup>+</sup>
Peer reviewed	17	35					<i>F</i> (1,33) = 0.198
Yes (RC)			-.263	-2.385			
No			-.394	-1.335	-.147	-0.445	
Study design	17	35					<i>F</i> (1,33) = 0.864
Cross-sectional (RC)			-.253	-2.352*			
Longitudinal			-.313	-2.848**	-.060	-0.929	
Delinquency measure	17	35					<i>F</i> (1,33) = 11.754**
Self-report (RC)			-.334	-3.452**			
Official records			-.186	-1.821 <sup>+</sup>	.158	3.428**	
Continent	17	33					<i>F</i> (1,33) = 0.472
Northern America (RC)			-.315	-2.712*			
Europe			-.154	-0.714	.169	0.687	
<i>Sample characteristics</i>							
Proportion ethnic minority	11	25	-.177	-2.548*	-.412	-1.015	<i>F</i> (1,23) = 0.321
Sex	17	35					<i>F</i> (1,33) = 0.356
Male only (RC)			-.347	-2.190*			
Mixed sample			-.230	-1.707 <sup>+</sup>	.127	0.597	
Age	17	35					<i>F</i> (1,33) = 0.331
Adults (RC)			-.211	-1.296			
Minors (<18 years old)			-.325	-2.449*	-.115	-0.575	
Sample type	17	35					<i>F</i> (1,33) = 2.310
Community (RC)			-.403	-3.143**			
Offender			-.123	-0.848	.294	1.520	

Note. *k* = number of independent studies; #ES = number of effect sizes;  $\beta_0$  = intercept/mean effect size (*r*);  $t_0$  = difference in mean *r* with zero;  $\beta_1$  = estimated regression coefficient;  $t_1$  = difference in mean *r* with reference category; *F*(*df*<sub>1</sub>, *df*<sub>2</sub>) = omnibus test; (RC) = reference category.

<sup>+</sup> *p* < .10.

\* *p* < .05.

\*\* *p* < .01.

\*\*\* *p* < .001.

### 3.3. Overall relation between shame and delinquency

The meta-analysis on the relation between shame and delinquency contained 17 independent studies (*k*), reporting on 40 effect sizes (#ES), and a total sample of *N* = 8025 subjects. A small, significant relation was found between shame and delinquency (*r* = -.130; 95% CI = -.235 to -.022; *p* < .01), indicating that higher levels of experiencing shame were associated with less delinquency.

When checking for publication bias, Egger's test was not significant ( $t = -0.090, p > .05$ ), indicating that there was no funnel plot asymmetry (Egger et al., 1997). Therefore, we did not execute the trim-and-fill-procedure. Rosenthal's fail-safe number was 2140, indicating that more than 2140 effect sizes with a value of zero had to be found in other studies to reduce the significant overall result in the current meta-analysis into a non-significant result. The fail-safe number was larger than the critical value of the current study ( $5 * 40 + 10 = 210$ ). Together, we concluded that a file drawer bias was unlikely (Egger et al., 1997; Rosenthal, 1991).

Concerning the heterogeneity of the effect sizes, the likelihood-ratio-tests showed that there was significant variance present at the second and third level. Therefore, we conducted moderator analyses on characteristics of shame, delinquency, studies and samples.

### 3.4. Moderator analyses on the relation between shame and delinquency

Table 4 presents the results of the moderator analyses on the relation between shame and delinquency. The type of shame (trait vs.

state, and generalized vs. contextual), and the type of delinquency (general vs. violent, and delinquency vs. recidivism) did not significantly moderate the relation between shame and delinquency. A non-significant moderating trend was found for whether the study controlled for the covariance of guilt and shame. Studies measuring "guilt-free" shame tended to show smaller associations with delinquency, than studies who did not control for the covariance of guilt and shame.

Considering study characteristics, the continent of where the study was performed (North-America vs. Europe) had a moderating effect on the relation between shame and delinquency. Stronger relations between shame and delinquency were found for studies conducted in Europe. Moderating trends were found for the impact factor of the journal in which the study was published and the design of the study. Smaller correlations between shame and delinquency were found in journals with higher impact factors and in longitudinal studies vs. cross-sectional studies. Publication year, whether the study was peer reviewed or not, and the delinquency measure (self-report vs. official records) did not significantly moderate the strength of the association between shame

**Table 4**  
Moderator effect of relation between feelings of shame and delinquency.

Moderator variables	<i>k</i>	#ES	$\beta_0$ (mean <i>r</i> )	$t_0$	$\beta_1$	$t_1$	$F(df_1, df_2)$
<i>IV and DV characteristics</i>							
Type of shame	40	17					$F(1,38) = 1.875$
Trait (RC)			-.158	-2.858**			
State			-.041	-0.502	.117	1.369	
Type of shame	40	17					$F(1,38) = 0.379$
Generalized (RC)			-.094	-1.180			
Contextual			-.138	-2.494*	-.045	-0.615	
Delinquency type	40	17					$F(1,38) = 0.322$
General (RC)			-.136	-2.524*			
Violent			-.091	-1.057	.045	0.568	
Delinquency type	17	40					$F(1,38) = 1.655$
Delinquency (RC)			-.156	-2.852**			
Recidivism			-.055	-.706	.102	1.287	
Controlled for covariance guilt	17	40					$F(1,38) = 3.798^+$
No (RC)			-.157	-2.931**			
Yes			-.021	-0.274	.136	1.949 <sup>+</sup>	
<i>Study characteristics</i>							
Publication year	17	40	-.132	-2.463*	.011	.762	$F(1,38) = 0.581$
Impact factor	14	31	-.150	-2.910**	.048	1.741 <sup>+</sup>	$F(1,29) = 3.031^+$
Peer reviewed	17	40					$F(1,38) = 1.129$
Yes (RC)			-.150	-2.675*			
No			.020	0.151	.170	1.062	
Study design	17	40					$F(1,38) = 3.278^+$
Cross-sectional (RC)			-.191	-3.211**			
Longitudinal			-.063	-1.045	.130	1.811 <sup>+</sup>	
Delinquency measure	17	40					$F(1,38) = 2.470$
Self-report (RC)			-.096	1.642			
Official records			-.192	-2.877**	-.098	-1.572	
Continent	16	39					$F(1,37) = 4.867^*$
Northern America (RC)			-.046	-0.721			
Europe			-.261	-3.498**	-.217	-2.206*	
<i>Sample characteristics</i>							
Proportion ethnic minority	12	31	-.129	-2.005 <sup>+</sup>	-.026	-0.057	$F(1,29) = 0.003$
Sex	17	40					$F(1,38) = 0.835$
Male only (RC)			-.181	-2.338*			
Mixed sample or female only			-.114	-2.038*	.069	0.914	
Age	17	40					$F(1,38) = 0.855$
Adults (RC)			-.078	-0.999			
Minors (<18 years old)			-.175	-2.412*	-.099	-0.924	
Sample type	17	40					$F(1,38) = 1.442$
Community (RC)			-.208	-2.476*			
Offender			-.081	-1.209	.129	1.201	

Note. *k* = number of independent studies; #ES = number of effect sizes;  $\beta_0$  = intercept/mean effect size (*r*);  $t_0$  = difference in mean *r* with zero;  $\beta_1$  = estimated regression coefficient;  $t_1$  = difference in mean *r* with reference category;  $F(df_1, df_2)$  = omnibus test; (RC) = reference category.

<sup>+</sup>  $p < .10$ .  
\*  $p < .05$ .  
\*\*  $p < .01$ .  
\*\*\*  $p < .001$ .

and delinquency. Also, no sample characteristics moderated the relation between shame and delinquency. Sex, the proportion of participants from ethnic minority groups in the sample, age group, and the sample type (offender samples vs. community samples) did not significantly influence the relation between shame and delinquency.

#### 4. Discussion

To assess the relation between self-conscious emotions and delinquency, we conducted two separate meta-analyses on the relation between guilt and delinquency, and shame and delinquency. Moderate and small associations between self-conscious emotions and delinquency were found, with  $r = -.278$  for guilt and delinquency, and  $r = -.130$  for shame and delinquency. These results indicate that higher levels of self-conscious emotions are related to lower levels of delinquency. Guilt was stronger related to delinquency than shame. In the meta-analysis on the relation between guilt and delinquency, stronger associations were found for studies using self-report than for studies using official records. In the meta-analysis on the relation between shame and delinquency, we found a moderating effect for the continent where the study was performed. Stronger associations between shame and delinquency were found in European studies than in Northern American studies. Finally, we found trends indicating that the covariance between guilt and shame affected the relation between self-conscious emotions and delinquency in that “shame-free” guilt yielded somewhat higher correlations and “guilt-free” shame somewhat lower correlations with delinquency.

The finding that higher levels of self-conscious emotions are related to less delinquency is in line with the conclusions drawn in the (selective) narrative review of Tangney et al. (2007). As expected, the current meta-analyses showed that guilt was more strongly related to delinquency when compared to shame. However, the results regarding the relation between shame and delinquency deserve careful interpretation. Notably, when studies were controlled for the covariance between guilt and shame, the overall correlation between shame and delinquency was reduced towards zero, and the overall correlation between guilt and delinquency increased. Possibly, the significant overall association between shame and delinquency found in the current study may be an overestimation of the true association, because in the majority of the included effect sizes the covariance between guilt and shame was present. Vice versa, the overall relation between guilt and delinquency in the current study may be an underestimation (i.e., a suppressor effect), because of the covariance with shame in the majority of the effect sizes. The relation between shame and delinquency has previously been described as equivocal (Eisenberg, 2000; Stuewig & Tangney, 2007; Tangney et al., 2011; Tangney et al., 2007). From a theoretical point of view both the inhibiting and the inciting effect of shame have been highlighted. It may be concluded that the inciting effect of shame through the path of externalizing the blame, and anger (which is well documented for aggression; Stuewig et al., 2010) does probably not hold for delinquent behaviors, but we did not find conclusive evidence for the inhibiting influence of shame either. This is in line with the conclusions of Tangney et al. (2014).

In the meta-analysis of the relation between guilt and delinquency, we found stronger associations between guilt and delinquency when delinquency was measured through self-report than when official records on delinquency were obtained. This result can be explained by the management of reputation hypothesis (Emler & Reicher, 1995), which indicates that delinquents want to present themselves as “tough” and “unemotional” in a society that is perceived as hostile to their interests. Such antisocial identity formation in delinquents may be reflected both in lower levels of guilt and an over reporting of delinquent behavior. A moderator effect of the continent where the included study was performed was found in the meta-analysis of the relation between shame and delinquency. Stronger associations between shame and delinquency were found in studies conducted in Europe instead

of, Northern America. This finding may be explained by the cross-cultural differences in self-conscious emotions that have previously been described in literature (Wong & Tsai, 2007). European societies tend to be more collective and interdependent, and less individualistic and independent than Northern American societies (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009; Varnum, Grossmann, Kitayama, & Nisbett, 2010). Kitayama and his colleagues found that Europeans experience more self-conscious emotions than Northern Americans. Further, shame appears to be more adaptive and less disruptive in collectivistic societies (Wong & Tsai, 2007), explaining the stronger, protective relation between shame and delinquency in European studies.

The absence of any moderating effect of delinquency type on the relation between self-conscious emotions was unexpected, because there are some differences between delinquency and aggression in the mechanisms underlying the relation with self-conscious emotions (Stuewig & Tangney, 2007; Tangney et al., 2011). Therefore, we expected that there would be differences between general and violent delinquency in relation to self-conscious emotions. One explanation may be that type of delinquency indeed does not moderate the relation between self-conscious emotions and delinquency. Another explanation for the non-significant finding may lie in the limited number of studies that could be included in the meta-analyses. In total, there were only five studies included in the current review that measured violent delinquency. Further, the absence of a moderating effect of gender was unexpected, as research has found gender differences in the development of self-conscious emotions and morality (Bybee, 1998; Tangney & Dearing, 2002b; Van der Graaff et al., 2014). Looking at the difference between the effect sizes for male ( $r = -.347$ ) and mixed samples ( $r = -.230$ ) a small, but non-significant, difference was found in the meta-analysis between guilt and delinquency, which indicates lack of statistical power to find small differences in moderator analyses. However, males generally dominated the samples, and as such the moderator test conducted in this study may not be an adequate test of the moderator effect of gender. The explanation of the lack of power can be used for the unexpected lack of a moderating effect of age group. The overall relation between self-conscious emotions and delinquency tended to be somewhat larger in minors than in adults. However, the small differences in effect sizes for minors and adults were not significant.

There are some limitations of the current study that need to be mentioned. The first limitation involves the operationalization of self-conscious emotions. Especially in more dated studies, the distinction between shame and guilt was questionable, and the terms were used interchangeably (Tangney, 1996; Tibbetts, 2003). Also, some researchers make a distinction between different kinds of shame and guilt that we were not able to take into account (Cohen et al., 2011). Second, people who offend are not a homogeneous group, but exist of first and repeated offenders and who are either involved in minor or more severe offences (DiLalla & Gottesman, 1989; Moffitt, 1993). The studies included in the meta-analysis provided basic information on their samples and mostly contained general community or offender samples. Therefore, the current meta-analysis offers limited opportunity to determine for who, when and how self-conscious emotions are specifically related to delinquency. For example, self-conscious emotions may play a larger role in sex offenders, because of the social stigma on sex offences (Schivone & Jeglic, 2009; Ward, Hudson, & Marshall, 1995). Last, because of the limited amount of studies and the limited variation between study and sample characteristics included in the current meta-analysis, some of the moderator analyses lack sufficient statistical power to find small differences in effect sizes.

The findings of the current study offer important implications for clinical practice and future research. The results indicate that there may be a role for guilt-inducing interventions and restorative justice approaches in the treatment of offenders (Jackson & Bonacker, 2006; Tangney, Stuewig, & Hafez, 2011). Citing Tangney et al. (2007): “The goal of such guilt-inducing restorative justice sentences is to prompt offenders to see, first-hand, the potential or actual destructiveness of their



infractions, to empathize with their victims, to feel behavior-focused guilt, and importantly, to actively involve them in constructive solutions” (p. 715). Examples of guilt-inducing interventions are the Victim Impact Training-programs or the Dutch Halt arrangements for diversion (Ferwerda et al., 2006; Jackson & Bonacker, 2006). However, the research that has yet been done into these programs do not show the expected outcomes; at post-test the intervention groups did not differ from control groups in guilt, shame or recidivism or even showed worse outcomes (Ferwerda et al., 2006; Jackson & Bonacker, 2006; Landenberger & Lipsey, 2005).

If shame should be incorporated in interventions is still unclear, but we incline to suggest staying away from shame promoting interventions. Gausel, Leach, Vignoles, and Brown (2012) found that shame can be a motivation for prosocial behaviors, such as repair and apologies, similar to the function of guilt in the motivation of pro-social behavior (Baumeister et al., 1994). However, focusing on shame within the clinical setting warrants a careful approach, as it can easily be felt as an attack on the self and trigger adverse defense mechanisms, such as aggression (Schalkwijk, 2015; Stuewig et al., 2010). The so-called “shaming” sentences are mostly designed to humiliate offenders, which is both ethically and clinically undesirable (Tangney et al., 2011). Moreover, Jones (2014) pointed out in her review that there is no empirical evidence that shame inducing interventions could be effective in preventing recidivism, and these interventions may even have a detrimental effect. Additionally, shame is related to a number of unfavorable mental health outcomes, such as depression and anger (Kim et al., 2011; Stuewig et al., 2010). Therefore, we do not argue that interventions should focus on inducing shame, but emphasize that therapists should acknowledge the role of shame in delinquent behaviors as suggested by Dearing and Tangney (2011), in particular in regard to acceptance of act committed to prevent externalization of blame which may hamper treatment progress. Future research should focus on whether interventions can influence the level of self-conscious emotions in offenders, and how this may influence prospective delinquent behavior. It is recommended to control for the covariance between guilt and shame to assess the unique contribution of the self-conscious emotions towards delinquency.

Self-conscious emotions are less researched in relation to delinquency than other aspects of moral development, such as the cognitive component of morality and empathy (Stams et al., 2006; Van Langen et al., 2014; Van Vugt et al., 2011). When the strength of the relation between self-conscious emotions and delinquency found in the current study is compared with the findings of meta-analyses on the relation between moral judgment and empathy, it shows the importance of self-conscious emotions, and especially guilt, as part of the role of moral development in delinquent behavior. The current study finds small to moderate relations between self-conscious emotions and delinquency of respectively  $r = -.13$  (shame) and  $r = -.28$  (guilt). Van Langen et al. (2014) found a relation between empathy and offending of  $r = -.21$  for cognitive empathy and of  $r = -.09$  for affective empathy, and the meta-analysis of Stams et al. (2006) into the moral judgment of juvenile delinquents a relation of  $r = -.36$ . We argue that self-conscious emotions are of similar relevance as empathy and cognitive aspects of morality, such as moral judgment and should therefore be fully integrated into the research on moral development and delinquency. In the future, more comprehensive moderator analyses can be performed leading to a better understanding of the theoretical, empirical and clinical level of delinquent behaviors.

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