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The longitudinal links between shame and increasing hostility during adolescence

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ABSTRACT

Little research has examined changes in emotional experience in adolescents. We hypothesized that the experience of shame would lead adolescents to become increasingly hostile. We report a one-year longitudinal study involving 765 high school students (392 males and 373 females; mean age = 14.41 yrs) in Grade 9 at Time 1 and 670 students (335 males and 335 females) in Grade 10 at Time 2. Shame and hostility showed high levels of stability over one-year. Structural equation modelling showed that higher shame in Grade 9 was predictive of increases in hostility in Grade 10, whereas hostility was not predictive of increases in shame. These results are discussed with reference to the nature of shame and its potential to provoke antisocial behaviour.

1. Introduction

Emotional states in childhood can affect levels of adjustment in adulthood (e.g. Robins & Rutter, 1990), yet longitudinal research into the consequences of emotions remains an under-researched area. This is particularly the case among adolescents. This is unfortunate as it is well documented that the teenage years are characterised by an increase in negative emotional states (Ciarrochi, Heaven, & Supavadeeprasit, 2008; Larson, Moneta, Richards, & Wilson, 2002).

One emotion of particular interest to the present study is shame. Although this affective state does not typically generate much scientific research, it has nevertheless been described as the "sleeper" in psychopathology with known links to a range of neurotic and psychotic symptoms (Lewis, 1987, p. xi), anger and aggression (Tangney, Wagner, Fletcher, & Gramzow, 1992), as well as depression (De Rubeis & Hollenstein, 2009). In the more popular press, shame is regarded as something of a "tonic" leading individuals to seek to amend for their wrongdoing by engaging in prosocial behaviours (see also Probyn, 2005). According to this view, shame has a purgative effect on the individual thereby acting as a socialising agent to reshape behaviours in a more positive direction.

Lewis (1971, 1987) suggests that an individual's views about the *self* are closely aligned with the experience of shame. More specifically, shame involves a negative evaluation of the whole self-system (Lewis, 1987; Lutwak, Panish, & Ferrari, 2003), an evaluation which is invariably accompanied by feelings of complete inadequacy, feelings of being "... a defective, objectionable self...", a self which feels "exposed" (Tangney, Miller, Flicker, & Barlow, 1996, p. 1257), and a self which one would rather have "shrink away" and disappear (Lindsay-Hartz, 1984; Tangney, 1995). Thus, the focus is on the core self, rather than on a specific behaviour or misdemeanour. This contrasts with feelings of guilt, for instance, where the focus is specifically on the impact of one's inappropriate behaviours and the impetus is to redeem oneself by improving one's behavioural repertoire (Tangney, 1991, 1995; Tangney et al., 1992).

What are the effects of experiencing shame? Shame may have adverse effects on relationships (Tangney, 1995; Tangney et al., 1992). It may lead to an excessive focus on the self and decreased feelings of empathy (Hoffman, 1984). It is often associated with one person believing other people are judging them as "bad" or unpraiseworthy (Ortony, Clore, & Collins, 1988). Thus, the shamed individual may seek to escape the painful judgments of others by aggressing against them, or by symbolically "destroying" them.

1.1. Aims and rationale of current study

The main aim of the present study was to assess the longitudinal relationships between the experience of self-reported shame and hostility. Although a number of studies have reported relationships between shame and hostility (e.g. Scheff, 1987; Tangney et al., 1992), this information is based on cross-sectional studies. Surprisingly, we were not able to locate studies that had used longitudinal data sets. Without longitudinal data, it is impossible to know whether shame precedes hostile mood states. Our

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longitudinal panel design allowed us to assess three models of the link between shame and hostility: the antecedent model suggests that shame leads to increasing hostility; the consequence model suggests that increases in shame are the consequence of hostility, whereas the reciprocal influence model suggests that shame and hostility mutually influence each other.

Our data are drawn from the *Wollongong Youth Study*, a longitudinal project concerned with the social and emotional development of high school students. The inclusion of the Positive and Negative Affect Schedule (PANAS-X; Watson & Clark, 1994) in Grades 9 and 10 allowed us to assess the extent that shame is likely to be a precursor to increases in hostility, or vice versa. The PANAS-X does not have a subscale labelled shame, but we will argue below that five of the six items on the guilt subscale are in fact a measure of shame as currently defined (see Lewis, 1987; Lutwak et al., 2003; Tangney, 1991, 1995; Tangney et al., 1992).

2. Method

2.1. Participants

At Time 1 participants were 765 high school students in the ninth grade (392 males and 373 females) attending 5 high schools in a Catholic Diocese in New South Wales, Australia. The mean age of the group was 14.41 yrs (SD = 0.53). Time 2 occurred one-year later when students were in the 10th grade. At this time 670 students participated in the study (335 males, 335 females). There was a slightly higher male to female ratio in Grade 9 compared to Grade 10, but a chi-square test of independence suggested that the gender ratio was not related to school grade, $\beta = .22$, $p > .1$. There were no significant mean differences on the measures between those who provided data at Time 2 (M shame = 1.77, SD = .96; M hostility = 1.94, SD = .83) and those who did not provide Time 2 data (M shame = 1.71, SD = .89; M hostility = 1.89, SD = .68).

The Diocese is centred on the city of Wollongong (population approximately 250,000) but also serves south-western metropolitan Sydney thereby delivering a diverse and heterogeneous population. Our sample closely resembles national distributions with respect to the number of intact families and language other than English in the home (Australian Bureau of Statistics, 2006, chap. 5). Our previous publications provide further details of the sociodemographic characteristics of our sample (e.g. Heaven & Ciarrochi, 2007, 2008).

2.2. Materials

The measures of interest to the present study are taken from the PANAS-X (Watson & Clark, 1994). Items that assess shame and hostility were included in our inventory in Grades 9 and 10 and are used in the present analyses. Shame was measured with five items taken from the "guilt" subscale. The items were "ashamed", "blameworthy", "angry at self", "disgusted with self", and "dissatisfied with self". Together with the item "guilt" which we omitted from our shame measure, Watson and Clark (1994) refer to the items listed above as measuring "guilt", but the items more clearly map onto the construct of shame. One item is "ashamed". The others involve negative evaluations of the self, rather than negative evaluations of specific behaviours (a prerequisite for guilt; Lewis, 1987; Lutwak et al., 2003; Tangney, 1991, 1995; Tangney et al., 1992).

Participants were asked to indicate how much they had experienced any of these feelings during the preceding month. Cronbach's coefficient alpha of the five-item shame scale was .92 (Grade 9) and .91 (Grade 10). Hostility was assessed with the following six items: "angry" "hostile", "irritable", "scornful", "disgusted", and "loathing". Cronbach's alpha of this scale was .85 (Grade 9) and .84 (Grade 10).

Table 1 shows the psychometric properties of the original six-item PANAS guilt scale. Consistent with the notion that the guilt item was somewhat different than the other items, the single guilt item had the lowest correlations with the other items, and also had the lowest item-total correlation (.63). All other item-total correlations were above .77. In addition, Cronbach's alpha of the total scale went up slightly from .917 to .921 with the removal of the guilt item, whereas it decreased with the removal of any other items. Moreover, our further research (Leeson, Ciarrochi, & Heaven, 2009) has shown that our PANAS shame scale correlates moderately ($r = .57$) with the Experience of Shame Scale (ESS; Andrews, Qian, & Valentine, 2002). This level of correlation is similar to that observed between other shame scales such as that between the ESS and the self-conscious affect scale, namely, $r = .61$ (Tangney, Wagner, & Gramzow, 1989). Our five-item shame scale therefore possesses satisfactory concurrent validity.

2.3. Procedure

We obtained university and Diocesan as well as parental and student permission to administer our questionnaires. Permission was renewed for each year of the study. Student refusals were very low each year, seldom rising above 2–4% of the student body. Participants were invited to participate in a survey on "Youth issues". Questionnaires were completed anonymously in class in the presence of one of the authors or a school teacher. Questionnaires were completed without discussion. Students were fully debriefed at the end of both testing sessions.

3. Results

Table 2 shows the relationships between shame and hostility across both year groups. Shame in Grades 9 and 10 were strongly related as was hostility in Grades 9 and 10 (both ds = 1.1) indicating relative stability of these variables over a one-year period. Shame and hostility were strongly correlated in Grade 9 ($d = 1.4$), and were also strongly correlated in Grade 10 ($d = 1.2$). The cross-lagged links of these variables (e.g. shame Grade 9 with hostility Grade 10) were relatively weaker, although remaining strongly related (ds were .7 and .9).

3.1. Predicting shame and hostility

We utilized structural equation modeling to test our hypothesis that shame at Time 1 would significantly predict hostility at Time 2 and that the obverse relationship would not apply or be significantly weaker. We utilized the full information maximum likelihood (FIML) method to deal with missing data. This method is often preferred to other methods on both theoretical grounds (e.g. it makes less restrictive assumptions) and empirical grounds

Table 1
Item-total correlations of PANAS guilt scale.

	1	2	3	4	5	6
1. Guilt	–	.66**	.61**	.50**	.52**	.46**
2. Ashamed		–	.77**	.61**	.63**	.55**
3. Blameworthy			–	.62**	.63**	.53**
4. Angry at self				–	.77**	.78**
5. Disgusted with self					–	.83**
6. Dissatisfied with self						–

** $p < .01$, two-tailed.

Table 2
Correlations between variables at two time points.

Variable and grade level	Shame 9	Shame 10	Hostility 9	Hostility 10
Shame 9	–			
Shame 10	.49	–		
Hostility 9	.58	.33	–	
Hostility 10	.42	.52	.50	–

Note: all correlations are significant at $p < .001$.

(the method appears to work better than its alternatives) (Bentler, 2006; Enders & Bandalos, 2001).

The core model involved utilizing shame and hostility in Grade 9 to predict shame and hostility in Grade 10, whilst also controlling for the covariation between these variables in Grade 9. We also represented measurement error in the model by utilizing three-item parcels as indicators of each latent variable (shame and hostility) at each time point. Items were placed into parcels in order to reduce the parameters estimated and thereby ensure sufficient power in the modelling and especially in estimating correlated errors. We divided the indicators into the following parcels: parcel 1: ashamed, disgusted with self; parcel 2: blameworthy, dissatisfied with self; and a third single item (angry at self).

Correlated errors and disturbances are a common occurrence in longitudinal designs (Kline, 1998), so we assumed correlated errors in our model. We considered the model to provide good fit if the χ^2/df was approximately 3 or less (Carmines & McIver, 1981), the normed fit index (NFI) was above .90 (Bentler & Bonett, 1980), and the root mean square error of approximation was below .05 (Browne & Cudeck, 1993). The model provided good fit to the data, $\chi^2(42) = 100.25$, $\chi^{2/}$/df = 2.39, NFI = .99, RMSEA = .043.

Fig. 1 illustrates the path components of Model 1. Shame and hostility showed moderate levels of stability, with past levels of hostility and shame respectively explaining 16% to 25% of the variance in future levels of hostility and shame. The cross-lagged effects indicated that higher shame in Grade 9 was predictive of increases in hostility in Grade 10 (after controlling for Grade 9 hostility). These results therefore support the shame-antecedent model. Because hostility did not predict increases in shame, our data are inconsistent with the "shame-as-consequence model" and the reciprocal influence model.

We next examined whether the individual "guilt" item was distinctive from the five shame items regarding its ability to predict hostility. We utilized six regressions to evaluate the extent that each item predicted hostility in Grade 10 when controlling for Grade 9 hostility. The "guilt" item did not significantly predict hostility ($\beta = .06$, $p = .10$), whereas each of the five shame items did, all $ps < .005$.

We next examined the extent that the significant effect of shame on hostility generalized across both genders. We used SEM to evaluate the model in Fig. 1 on females and males. We compared a model that assumed sex differences in cross-lagged effects ($\chi^2 = 143.8$, df = 84) to one that assumed no difference ($\chi^2 = 145.6$, df = 86). There was no significant difference between the two models, $\chi^2_{diff} < 2$, $p > .05$, indicating that the main effects of shame in Fig. 1 generalized across both gender groups. Shame significantly predicted increasing hostility in females ($\beta = .18$) and males ($\beta = .20$), whereas hostility did not predict shame in either females ($\beta = .09$, $p > .15$) or males ($\beta = -.03$, $p > .15$).

Finally, we re-ran our analyses with a slightly amended hostility scale. We deleted the items "scornful" and "disgusted" as they might be construed as emotions more akin to disgust than hostility. This modification to the hostility scale had little effect on outcomes. The shame to hostility link was $\beta = .16$ ($p < .01$), whilst the hostility to shame link remained not significant ($\beta = .07$, n.s.).

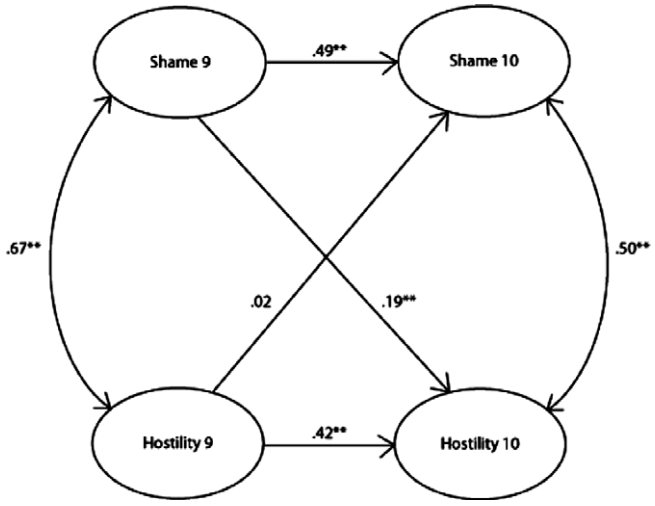

Fig. 1. Longitudinal links between shame and hostility in Grades 9 and 10.

4. Discussion

The main aim of this research was to assess the extent that shame was an antecedent or consequence of hostility. Our data clearly support the antecedent model. Adolescents who felt shame in Grade 9 were more likely to show increases in hostility from Grade 9 to Grade 10. In contrast, hostility did not predict increases in shame. These results were replicated across both gender groups and support a number of earlier correlational studies suggesting that shame and hostility are closely associated (e.g. Tangney, 1995; Tangney et al., 1992). Our results go further by showing that, in an adolescent sample, shame predicts changes in hostility, rather than being a concomitant or consequence of hostility.

Shame is often used in order to motivate others to engage in prosocial or praiseworthy action. For example, if a child is caught bullying another child, a parent might say "you should be ashamed of yourself" in the hope that the child will not engage in this behaviour. However, shame has major downsides. Those who experience shame seek to defend themselves against shameful feelings by acting in a hostile and aggressive manner toward others (Lutwak et al., 2003; Scheff, 1987; Tangney et al., 1992). Our data suggest that shame leads to increasing hostility and future longitudinal research should assess the consequences of shame on other social behaviours.

Our research represents just a one-year glimpse of the relationships between shame and hostility. Future research needs to assess the extent to which shame continues to influence hostility and, if so, what the cumulative effects are on adolescents' overall adjustment and the quality of their interpersonal relationships. In other words, how will persistent high levels of shame over a number of years affect adolescent well-being into adulthood? How will persistent shame over time affect the quality of interpersonal relationships into the future?

4.1. Limitations

One limitation of our study is our single-method approach and our reliance on self-report. It would have been ideal to gather observers' reports of adolescents' behaviour or other objective measures of shame and hostility. Notwithstanding this methodological weakness, the results of our study are consistent with prevailing research in this area. Our results, in fact, add strength to the view that shame is not an effective way to shape prosocial behav-

iour. Shame has a downside and appears to have a paradoxical effect, making it more likely that adolescents will engage in aggressive, antisocial behaviour. Future research is needed to explicitly test this hypothesis.

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