



# Shame and guilt among ice hockey players in the penalty box

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## Abstract

Shame and guilt proneness are negative emotional dispositions that diverge in their behavioral responses. After a wrongdoing, shame tends to have a maladaptive influence on behavior, and guilt tends to have an adaptive influence on behavior. The current study sought to investigate shame and guilt tendencies among children and adolescents in a real-world context that has all the characteristics to generate these feelings: the hockey penalty box. We surveyed children and adolescent ice hockey players with experience serving time in the penalty box ( $N = 123$ ). Findings showed that players who were higher in guilt proneness recalled experiencing more guilt-related feelings and cognitions in the penalty box than players lower in guilt proneness. The different cognitions relate to more anticipation of improving their playing. Players higher in shame proneness experienced more shame-related feelings and cognitions than players lower in shame proneness, which was related to more self-blaming. These findings have implications for the development and consequences of prosocial behaviors.

**Keywords** Shame proneness · Guilt proneness · Self-blame · Reparative action · Development

In the Middle Ages, individuals who had committed moral or legal violations were often subjected to public shaming, which was considered an excellent means of behavioral change. Now that pupils are no longer obliged to wear “dunce caps” for misbehavior in the classroom, we could say that public shaming rituals are a thing of the past in Western society. Arguably, however, one still remains: the penalty box in competitive ice hockey, which is also aptly called the *sin bin*. As punishment for a penalty, hockey players are put on display in a small glass enclosure immediately in front of the fans.<sup>1</sup> Both shame (“I am a bad player”) and guilt (“I feel bad about causing a situation in which the other team is more likely to score”) could be elicited in the penalty box. In

the present study, we examined boys’ reported feelings in the penalty box and behavioral intentions when returning to the ice to provide a strong test of currently accepted theoretical distinctions between shame and guilt among children and adolescents. Further, by recruiting a sample of boys ages 9 to 16, we were able to track the relations over adolescent development. Consistent with prior thinking, our findings support the utility of guilt and the negative consequences of shame.

## Shame and guilt

Shame and guilt are self-evaluative response styles to committed offenses and transgressions (Tangney et al. 2007). Specific comparisons of the two emotions often find that they involve a focus on different concerns that result in distinct phenomenological experiences (Lewis 1971; Lindsay-Hartz 1984; Niedenthal et al. 1994; Tangney et al. 2007; Wicker et al. 1983). In particular, shame involves a negative

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<sup>1</sup> Explicit shaming is most developed in Rogers Arena in Vancouver, British Columbia—home of the Vancouver Canucks—due to the behavior of the Green Men. The Green Men are two individuals who have purchased seasons tickets next to the opposing team’s penalty box. At each home game, they don full-body spandex suits and taunt occupants of the penalty box throughout the game. For an example see: [https://www.youtube.com/watch?v=vO\\_Bn4CVbYk](https://www.youtube.com/watch?v=vO_Bn4CVbYk).

evaluation of one's whole self (i.e., a self-evaluation). Shame is characterized by feelings of being "small", worthless, and exposed, and often results in defensive and hiding behaviors (Tangney et al. 2014). In contrast, guilt involves a negative evaluation of one's behavior (i.e., a behavioral evaluation). Guilt is characterized by experiences of regret and remorse over one's behavior and tends to result in reparative behaviors following a transgression (Tangney et al. 2014). The cognitive-affective processes in guilt stop short of the self-condemnation involved in shame.

Shame and guilt are often used interchangeably as they are commonly experienced simultaneously. Still, decades of research on their unique characteristics has shown that they differ in their action tendencies. Shame differentiates itself as a maladaptive emotion because it motivates withdrawal and externalization of blame, and hinders self-forgiving processes, whereas guilt differentiates itself as an adaptive emotion as it motivates reparation and self-forgiveness (Carpenter et al. 2016; Tangney et al. 2014).

However, more recent research has looked into the adaptive benefits of shame. Whereas studies on shame and guilt continue to affirm guilt's motivation of constructive behaviors, the history of shame as a maladaptive emotion has been put into question (de Hooge et al. 2008). Shame can activate behaviors that deal with the threatened self, which includes approach behaviors similar to those motivated by feelings of guilt (de Hooge et al. 2010; Gausel and Leach 2011). After feeling shame, one might approach the situation and attempt to correct it, and if this does not work or is not feasible, the individual might withdraw from the situation (de Hooge et al. 2010). Tangney et al. (2014) also found that shame had a marginally significant inhibitive effect on recidivism among jail inmates. They explain that this effect might be due to a potentially prosocial consequence of shame that motivates people to avoid certain shameful behaviors.

These findings on the potential prosocial and adaptive benefits of shame have differentiated themselves between *trait* shame (i.e., shame proneness; an individual's disposition to feel shame following a transgression) and *state* shame (i.e., situational shame). Research validating the maladaptive approach to shame largely focus on trait shame, which is the majority of research on shame. More recent findings on state shame include the potential adaptive benefits of this form of shame (de Hooge et al. 2008, 2010). Because the present research focuses on shame and guilt *proneness*, we utilize the empirically-supported paradigm that shame and guilt contrast each other, where guilt proneness is a generally adaptive trait, and shame proneness is a generally maladaptive trait.

While most situations are not inherently shame or guilt inducing (Tangney et al. 2007), individual differences in the tendency to respond with shame versus guilt exist. A number of methods have been developed to evaluate differences in the extent to which people are prone to experiencing shame

and guilt independently (e.g., Cohen et al. 2011; Harder and Lewis 1987; Tangney et al. 1992b). One of the most widely used scales is the Test of Self-Conscious Affect (TOSCA; Tangney et al. 1989). Studies utilizing the TOSCA on adults have found that shame proneness is positively correlated with feelings of anger and hostility (Tangney et al. 1992a), and low trait self-control (Tangney et al. 2004). In contrast, guilt proneness is associated with a remorseful and reparative response to engaging in "bad" behaviors (Tangney 1995). Additionally, people high in guilt proneness are more likely to behave more ethically and honestly compared to people low in guilt proneness (Cohen et al. 2012).

## Shame and guilt in child and adolescent development

The emotions of shame and guilt require self-reflection, a capacity that typically emerges in children by the end of year 2 (Lewis and Ramsay 2004), and the ability to evaluate one's self and actions based on standards, rules, and goals for attribution purposes, which typically emerges by age 3 (Lewis 1992). Chronic proclivities to experience these emotions emerge quite early as well, and measures of shame and guilt proneness have been developed for children (TOSCA-C; Tangney et al. 1990), and adolescents (TOSCA-A; Tangney et al. 1991b). As in adult samples, shame proneness appears to be positively correlated with self-reports of anger in fifth grade boys and girls (Tangney et al. 1991a). Shame proneness in boys, but not girls, is also positively associated with teacher reports of aggressive behavior. Shame proneness is further associated with the tendency to engage in destructive behavior during experiences of anger in children, adolescents, college students, and adults (Tangney et al. 1996b). Moreover, shame proneness in childhood predicts a number of negative behavioral outcomes in later life (e.g., increased risky behaviors; Stuewig et al. 2015), making the study of shame and guilt among children and adolescents necessary for understanding well-being in adulthood.

While extant research among children and adolescents has examined the behavioral consequences of shame and guilt in hypothetical scenarios and autobiographical accounts, few studies involving this age demographic have investigated these feelings in situations that have been designed to elicit strong self-evaluative emotions with the aim of changing behavior, as in the public shaming rituals of the Middle Ages mentioned above. The penalty box in competitive ice hockey, also called the *sin bin*, is a modern example of this form of shaming. The penalty box is designed to punish behavior, and, unlike any other competitive sport, it has retained the features of public shaming: The player is separated from the other team members, enclosed in a glass box, and subjected to taunts from the fans of the opposing team. Although the conditions

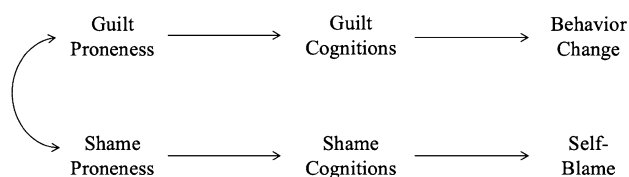


Fig. 1 The hypothesized causal relationships

are appropriate for shame, guilt could also be experienced if the player focused not on the self in general, but on a specific behavior as the cause of the offence and the resulting power play.

## Overview of the present research

In the present research, we examined the relationships between shame and guilt proneness and reactions to being in the penalty box as reported by young competitive hockey players, almost all of whom were boys in this study (see Method section). Previous research on children and adolescents has shown significant relationships between guilt and shame proneness with behavioral consequences (Tangney et al. 1996a, b), but little has been done to examine the distinct role of guilt- and shame-related cognitions in these relationships. However, research on guilt and shame within adulthood shows that guilt prone individuals have more guilt-related cognitions which results in adaptive action tendencies (Tangney et al. 2014). We thus hypothesized that, when reflecting on their experiences in the penalty box, players high in guilt proneness would report typical guilt-related thoughts and feelings, and fewer shame-related thoughts and feelings. In addition, we expected them to report less self-blame and more intentions to change their behaviors compared to those lower in guilt proneness. On the other hand, we expected players high in shame proneness to report more shame-related thoughts and feelings than guilt-related ones, and also more self-blame and fewer intentions to change their behaviors than boys lower in shame proneness, also consistent with previous research (Tangney et al. 2014). See Fig. 1 for the hypothesized causal relationships.

## Method

### Participants

Participants were 123 children recruited through locally posted fliers and letters sent to coaches and parents of youth hockey team members in a mid-sized American city. Informed consent was collected from both the participants

and their parents. Each participant received a \$10 Target gift card in exchange for their efforts. Participants ranged from 9 to 16 years of age ( $M_{\text{age}} = 11.46$ ,  $SD = 1.70$ ) and included 120 males (98%) and 3 females. Participants reported that they started playing hockey, on average, at 5.04 years of age ( $SD = 1.68$ ). Participants estimated that they were sent to the penalty box, on average, 6.56 times per season ( $SD = 6.89$ ).

### Procedure and measures

Under the supervision of their guardians, the participants completed an online survey that took approximately 25 min. The survey included the 30-item TOSCA-C for participants aged 12 or younger ( $N = 86$ ) or the 30-item TOSCA-A for participants aged 13 or older ( $N = 36$ ). Both TOSCAs measure shame- and guilt proneness on 5-point Likert scales (1 = not at all likely to 5 = very likely). They are composed of 15 items that assess *guilt proneness* (TOSCA-C:  $M = 3.70$ ,  $SD = .45$ ,  $\alpha = .77$ ; TOSCA-A:  $M = 3.79$ ,  $SD = .44$ ,  $\alpha = .76$ ) and 15 items that measure *shame proneness* (TOSCA-C:  $M = 2.46$ ,  $SD = .56$ ,  $\alpha = .83$ ; TOSCA-A:  $M = 2.38$ ,  $SD = .58$ ,  $\alpha = .84$ ). Controlling for TOSCA version (TOSCA-A vs. TOSCA-C) in the analyses below did not change any of the effects found. TOSCA version also did not moderate the relationships of *guilt proneness* and *shame proneness* with each other or with any of the other outcome measures reported below (all  $p$ 's > .106).

Because shame and guilt both involve negative emotions and dispositional attributions, they are expected to overlap with each other (Tangney et al. 2004). Although, when shared variance is statistically accounted for, their constructs are shown to maintain distinction from each other (Tangney et al. 2004), and factor analysis on TOSCA measures have shown shame and guilt items to clearly factor onto their respective constructs (Wolf et al. 2010).

The survey also included eight items that measured participants' *shame-related cognitions* ( $\alpha = .82$ ), which asked participants about the shame-related thoughts and feelings they typically have while in the penalty box (e.g., *When I'm in the penalty box, other people look down on me*). *Guilt-related cognitions* were measured with six items ( $\alpha = .69$ ) that asked participants about the guilt-related thoughts and feelings they typically have while in the penalty box (e.g., *I am in the penalty box because I did something wrong*). *Behavior change* was measured with two items ( $r = .558$ ) that asked about their typical behavioral intentions after being in the penalty box (*I am less likely to commit a foul now than I was before I was in the penalty box* and *I should get back at the other team*). Finally, *self-blame* was measured with two items ( $r = .355$ ) that asked players about how worthless they typically feel when in the penalty box (*I feel*

**Table 1** Descriptive statistics for and bivariate correlations between all of the variables in the study

	Mean	Standard deviation	Guilt proneness	Shame proneness	Guilt cognitions	Shame cognitions	Behavior change	Self-blame	Age
Guilt proneness	3.73	.45	–	.165 <sup>T</sup>	.509 <sup>***</sup>	.161 <sup>T</sup>	.287 <sup>**</sup>	.285 <sup>**</sup>	–.022
Shame proneness	2.44	.56		–	.178 <sup>T</sup>	.529 <sup>***</sup>	.162 <sup>T</sup>	.475 <sup>***</sup>	.036
Guilt cognitions	3.74	.56			–	.507 <sup>***</sup>	.598 <sup>***</sup>	.447 <sup>***</sup>	–.009
Shame cognitions	2.37	.65				–	.476 <sup>***</sup>	.707 <sup>***</sup>	.037
Behavior change	3.66	.88					–	.528 <sup>***</sup>	–.053
Self-blame	2.69	.88						–	–.053
Age	11.46	1.7							–

The *N*s for each variable ranged from 119 to 123 because of incomplete responses

<sup>T</sup>*p* < .10, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001

badly about having been in the penalty box and I wish I wasn't a bad teammate). The survey contained other items that were included for exploratory purposes. After completing the survey, participants and their parents were debriefed and thanked for taking part in the study.

## Results

### Main analyses

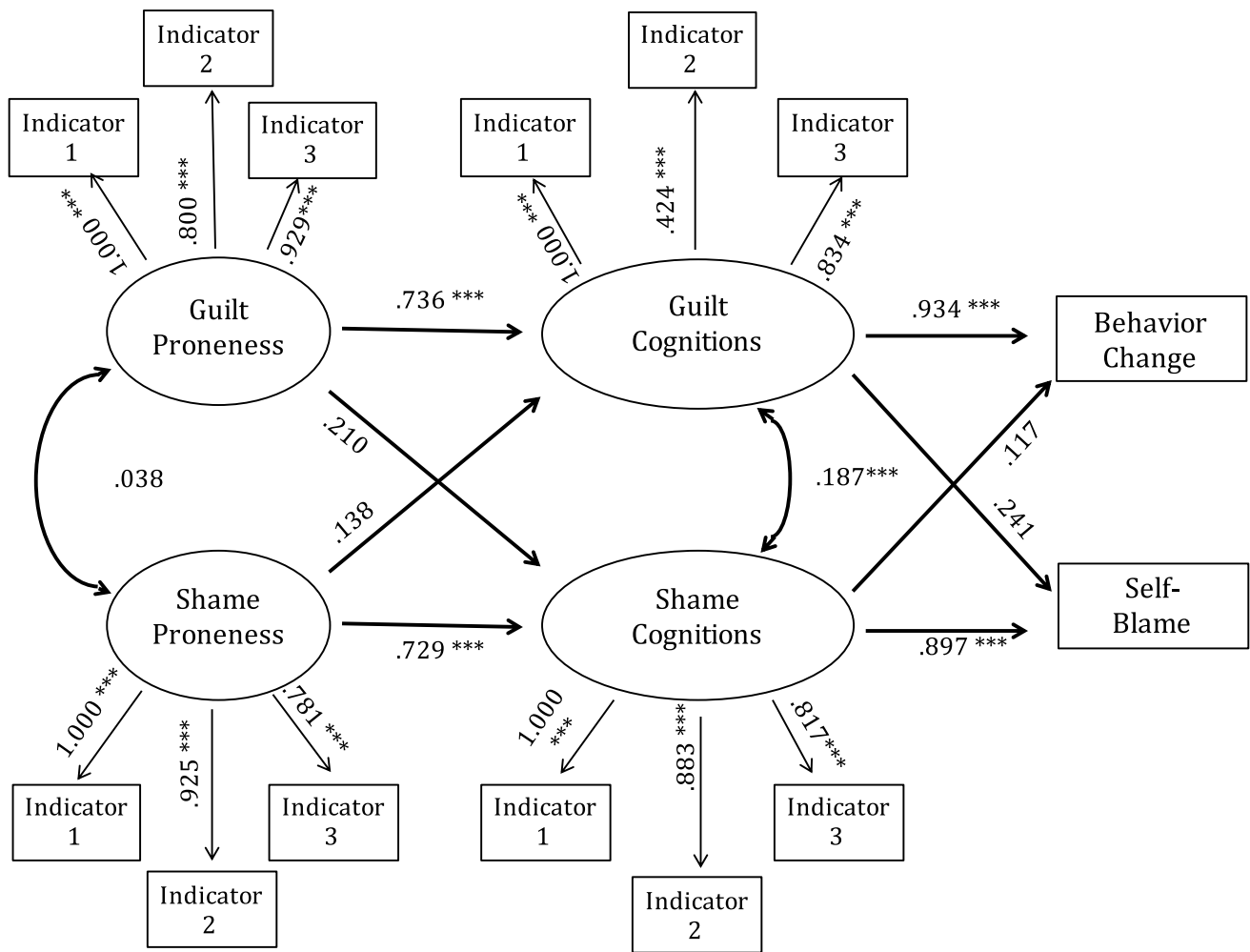
First, we computed a *guilt proneness* score by averaging across all fifteen TOSCA guilt proneness items, and a *shame proneness* score by averaging across all fifteen TOSCA shame proneness items. The two scores were normally distributed. Next, we computed a composite *shame cognitions* score by averaging across the eight items that asked participants about their shame-related thoughts in the penalty box, and a composite *guilt cognitions* score by averaging across the six items measuring guilt-related thoughts. Finally, we computed one composite *behavior change* score and one composite *self-blame* score by averaging across the appropriate items. Table 1 shows the bivariate correlations among all of these variables and age.

We estimated a structural equation model with the constructs discussed in the previous paragraph. Guilt proneness and shame proneness were considered exogenous variables, guilt cognitions and shame cognitions as mediators, and behavior change and self-blame as outcome variables (see Fig. 2). We treated guilt proneness, shame proneness, guilt cognitions, and shame cognitions as latent constructs, and behavior change and self-blame as observed variables. For each of the latent constructs we formed three indicators (parcels) by averaging across one third of the items (i.e., items 1, 4, 7,... were averaged to form the first indicator, items 2, 5, 8,... formed the second indicator, and items 3, 6, 9,... formed the third indicator). Parceling is a standard procedure that many researchers

have written about within the past 50 years (e.g., Little et al. 2002). Models using parcels are more parsimonious (have fewer parameters), are more stable, have fewer chances for residuals to be correlated or for dual loadings to emerge, and lead to reductions in various sources of sampling error (MacCallum et al. 1999). Structural equation modeling analyses were done using lavaan in R (Rosseel 2012). Initial analyses suggested that model fit was considerably better when we allowed the disturbances of the two mediators to be correlated, so we estimated a model that included this disturbance correlation (we will come back to this point later).

The results suggested that the estimated model fit the data well. Chi square = 129.364, *p* < .001, *df* = 69, Chi square/*df* = 1.874 (considered satisfactory when < 2.5 in samples between 100 and 200), CFI = .921 (considered satisfactory when > .9), SRMR = .073 (considered satisfactory when < .08), GFI = .99 (considered satisfactory when > .90), RMSEA = .085 (considered satisfactory when < .06; see Blunch 2013, and Kline 2015, for a discussion of fit indices). The path coefficients are shown in Fig. 2. As can be seen, the data are consistent with the idea that individual differences (guilt proneness and shame proneness) influenced their respective cognitions (guilt cognitions and shame cognitions), which in turn affected the corresponding outcome measures (behavior change and self-blame). None of the crossed paths were significant suggesting that shame and guilt constructs had relatively little influence on each other.

We re-estimated the model without the crossed paths. A Chi square difference test revealed that removing the crossed paths did not significantly decrease model fit, Chi square difference = 9.216, *p* = .056, *df* = 4. Taken together, these analyses provide empirical evidence supporting the hypothesized relationships between the constructs. Guilt prone players reported guilt-related cognitions (but not shame-related cognitions) in the penalty box, whereas shame prone players reported shame-related cognitions (but not guilt-related cognitions). Players' cognitions were in turn predictably



**Fig. 2** Structural equation model linking guilt and shame proneness with guilt- and shame-related cognitions, behavior change, and self-blame. The numbers next to the arrows are unstandard-

ized path coefficients. Chi square=129.364,  $p < .001$ ,  $df=69$ , Chi square/ $df=1.874$ , CFI=.921, SRMR=.073, GFI=.99

related to their intentions upon returning to the ice. Whereas players with many guilt-related cognitions focused on what they could do to prevent another penalty, players with many shame-related cognitions continued to blame themselves and to feel badly about being a poor teammate.

**Developmental analyses**

As already mentioned, model fit deteriorated when the disturbance correlation between guilt cognitions and shame cognitions was fixed to zero. This result suggests that these two constructs share a common cause that is not included in our structural equation model. Exploratory analyses revealed that the common cause is likely to be age in that there is a strong curvilinear effect of age on each of these constructs. We ran two multiple regression models in which we regressed either guilt-related cognitions or shame-related cognitions on age (mean-centered) and age squared. In

both models, the linear effect of age was non-significant ( $p$ 's > .467) but the quadratic trend of age was highly significant ( $p$ 's < .016). Intermediate aged players (i.e., children in their early teens) tended to have more guilt and shame cognitions than players who were younger and older. Age—both the linear and the quadratic trend—explained 4.8% of the variance in guilt cognitions and 9.6% of the variance in shame cognitions.

**Discussion**

Research on shame and guilt across development has social implications ranging from how children are taught prosocial behaviors in the home and at school to how to punish individuals who commit crimes. In this study, we used a designated context for elicitation of shame and guilt, the ice hockey penalty box, to examine the relationships between

guilt and shame proneness, shame- and guilt-related cognitions, behavior change, and self-blame. As hypothesized, guilt proneness was related to guilt-related cognitions, but not shame-related cognitions. Guilt-related cognitions, in turn, were related to behavior change, but not self-blame. These findings are consistent with previous research showing that guilt prone individuals evaluate their behavior after committing wrongdoings rather than conducting self-evaluations, which then leads to behavior-focused action tendencies (Tangney et al. 2014). We also found that shame proneness was related to shame-related cognitions, but not guilt-related cognitions. Shame-related cognitions, in turn, were related to self-blame, but not behavior change. These results are also consistent with previous research on the self-evaluative tendencies of shame prone individuals (Tangney et al. 2014). The lack of a relationship between shame-related cognitions and behavior does not support previous findings showing that shame-related cognitions can promote prosocial behaviors, such as trying to correct the situation or avoiding shameful behaviors (de Hooge et al. 2010; Tangney et al. 2014). In sum, these results provide stronger and further evidence that shame and guilt proneness have unique cognitive processes that motivate different behavioral responses.

A major strength of this research is the use of a real-world situation among children and adolescents where experiencing shame and guilt is the designated goal. Rather than made-up scenarios that participants would have to imagine themselves in (but might never had experienced) or asking participants to recall situations when they committed a wrongdoing and reflect on them (with different participants recalling different situations), having the penalty box as the to-be-recalled situation provides more control since all participants have real experience with it and the purpose for it is to elicit shame and guilt. In other words, by accessing guilt- and shame-related cognitions, as well as behavior change and self-blame in the context of the hockey penalty box, this study reliably documents claims about guilt and shame proneness in a naturalistic context. A limitation of this research is that it accessed shame and guilt by having participants recall their thoughts and feelings in the penalty box due to the difficulty of administering a questionnaire in the limited time a hockey player sits in a penalty box, and the potential to disrupt the integrity of the game. Additionally, collecting data right after a game is not very feasible because there is no guarantee of how many players, if any, would end up in the penalty box. However, the recalled situation of being in the penalty box is reasonably robust for hockey players who have had numerous lived experiences in the “sin bin.”

The research also showed significant and interesting changes in guilt and shame cognitions over development. Rather than showing a linear relationship between age and

guilt and shame cognitions, younger players and older players in our sample reported fewer such cognitions than did players in their early teens. Future research may want to examine mechanisms that result in patterns of change in guilt and shame tendencies from childhood to early adolescence and late adolescence.

The major shortcoming of the present paper is the fact that it is based on cross-sectional data. It is impossible to provide unambiguous evidence for causal relationships with such data (Maxwell and Cole 2007). However, structural equation models like the one shown in Fig. 2 still provide useful insights. When analyses with cross-sectional data are based on well-founded theoretical predictions for the causal direction, as well as prior findings, cross-sectional mediation has the potential to reveal causal mechanisms (MacKinnon et al. 2007; Shrout 2011). In the present case, for example, it is unlikely that children’s behavioral intentions when coming out of the penalty box influence their guilt proneness. And the fact that guilt and shame proneness have downstream consequences for cognitions and behavior has been shown in earlier research (Roos et al. 2014). The present study shows that guilt and shame proneness, two stable individual differences, are likely to trigger a series of corresponding cognitions, feelings, and behavioral intentions among young ice hockey players when they are sent to the penalty box. Another limitation in our study is that our self-blame outcome measure had a relatively low internal consistency.

The increasing evidence for the adaptive tendencies of guilt proneness and maladaptive tendencies of shame proneness begets a need to develop methods to reduce the negative behavioral consequences of shame. This is critical because being more shame prone as a child predicts increased risky behavior in young adulthood (e.g., drinking at a younger age, drug use, and unprotected sex) compared to children who are more guilt prone, which predicts the opposite (Stuewig et al. 2015). Understanding how cognitions influence reparative or non-reparative action as a result of guilt and shame proneness will be important as children and adolescents continue to develop their emotional coping skills. As this study shows, guilt cognitions play an important role in influencing reparative action and reducing maladaptive responses, such as self-blame, to situations that may elicit guilt or shame. These more adaptive processes may be valuable to reducing the likelihood of certain negative behaviors in adulthood. Future research could focus on developing and testing methods that help children and adolescents overcome their shame proneness by focusing their energies on experiencing guilt cognitions. Future research might also examine the outcomes state shame and guilt have on action tendencies among children and adolescents within similar real-world contexts. As mentioned, recent findings on state shame shows that shame may motivate adaptive behavioral responses to transgressions through similar approach and

repair behaviors consequent of state and trait guilt (de Hooge et al. 2010). It will be interesting to assess the interaction between shame proneness and state shame as their action tendencies may inhibit or exacerbate each other. Finally, it is also critical to understand what factors impact the development of guilt and shame proneness during the captious developmental stages of middle childhood and adolescence as they have implications for future behaviors and self-evaluations. Thus, future work should also pay attention to those environmental factors that lead individuals to be more guilt or shame prone.

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed consent** Informed consent was obtained from both the participants and their parents.

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