

Integrating multiple perspectives on schadenfreude: The role of deservingness and emotions

N. T. Feather · Michael Wenzel · Ian R. McKee

Published online: 7 December 2012
© Springer Science+Business Media New York 2012

Abstract Schadenfreude, or pleasure in another person's misfortune, has been linked to a cognitive appraisal that other deserves the misfortune. In the present study we develop a structural model that links schadenfreude to global self-esteem, pain of inferiority, hostile and benign envy, resentment, perceived deservingness, and sympathy. We also examine the effects of ingroup/outgroup membership on schadenfreude and test for the invariance of our structural model between these two conditions. Participants ($n = 170$) responded to a hypothetical scenario that manipulated ingroup/outgroup membership and perceived deservingness in relation to other's initial success and subsequent failure. Results supported a structural model that showed invariance. They also showed that more schadenfreude was reported when the outgroup member failed and more sympathy and anger when the ingroup member failed. These results provide an integrated structural approach to the analysis of schadenfreude.

Keywords Schadenfreude · Deservingness · Group membership · Envy · Resentment · Pain of inferiority · Self-esteem

Introduction

This paper reports a study whose main aim was to relate schadenfreude, or pleasure in another's misfortune, to judgments of deservingness and to emotions that relate to

deservingness. These emotions are assumed to mediate between deservingness and schadenfreude. They encompass hostile and benign envy, resentment, and sympathy, all of which are assumed to play a part in the cognitive-emotional chain leading to schadenfreude. We also included participants' self-esteem as an individual difference variable in our analysis as well as pain of inferiority.

A second aim of the study was to investigate the effects of social identity on perceived deservingness and schadenfreude. We expected that the schadenfreude reported about another's misfortune would vary depending on whether the other person belonged to an ingroup or an outgroup.

We describe an experimental study that first manipulated the degree to which a high performing student was perceived to deserve that high performance and its consequent rewards. The student was then portrayed as suffering a failure that provided the occasion for expressions of schadenfreude. We also manipulated the social identity of the student in terms of ingroup or outgroup membership. After controlling for social identity, we then present the results of a structural analysis that explores how the variables listed above might combine to determine schadenfreude, testing the invariance of the structural model between ingroup and outgroup conditions that defined social identity. The research is both innovative and integrative, bringing together variables that have been the focus of different research approaches.

First, however, we describe the proposed links between deservingness and emotions and their connections to schadenfreude.

Deservingness and emotions

In his recent analysis of discrete emotions and perceived deservingness, Feather (2006) identified emotions that

This research was funded by a grant from the Australian Research Council (Project Number: DP0664939).

N. T. Feather (✉) · M. Wenzel · I. R. McKee
Faculty of Social and Behavioural Sciences, School of
Psychology, Flinders University, GPO, Box 2100, Adelaide, SA,
Australia
e-mail: norman.feather@flinders.edu.au

were assumed to occur when self or other experiences a positive or negative outcome that is perceived to be either deserved or undeserved. This analysis built upon his theoretical analysis of deservingness (Feather 1999a, b) which related perceived deservingness to structures involving relations that are either balanced or unbalanced using Heider’s (1958) principle. In this structural analysis deservingness is conceived of as a justice-related variable that applies to outcomes for which there is some degree of personal responsibility within a framework of personal causation. Positive outcomes for self or other are assumed to be perceived as deserved when they follow positive actions. So are negative outcomes that follow negative actions. In contrast, positive outcomes are perceived to be undeserved when they follow negative actions. So are negative outcomes that follow positive actions. Thus, perceived deservingness relates to whether or not there is a consistent or inconsistent relation between positive or negative outcomes and the positive or negative actions that produced them.

Some examples follow. A student’s success in an academic pursuit (a positive outcome) would be perceived as deserved if he or she worked hard to achieve that success (a positive action) but less deserved if he or she displayed little effort (a negative action). Failure (a negative outcome) would be perceived as undeserved if it followed high effort on the part of the student but deserved if it was associated with low effort. Deservingness would also be reduced if the student was perceived to be less responsible for a positive or negative outcome. At the extreme, judgments of deservingness are not relevant or appropriate when a person has no responsibility for the outcome.

The present study assessed emotions relating to another person’s deserved or undeserved outcomes, in particular outcomes that involve a prior success and a subsequent failure. Table 1 lists the emotions that are assumed to follow these outcomes based on Feather’s (2006) extension of deservingness theory. Of particular note are the emotions of pleasure/admiration, resentment, sympathy, and schadenfreude.

Table 1 enables predictions about these emotions. We would expect an outside observer to report some degree of *pleasure/admiration* when the other person experiences a deserved positive outcome such as success at an examination or promotion in a business organization. In contrast, *resentment* would be more likely to occur when the other’s positive outcome is perceived to be undeserved. When the other person suffers an undeserved negative outcome we would expect an outside observer to report some degree of *sympathy*. But when the other’s negative outcome is perceived as deserved, we would expect the outside observer to report *schadenfreude* or some degree of pleasure in the other person’s misfortune.

Table 1 Discrete emotions relating to another person’s deserved or undeserved positive or negative outcomes

Deserved positive outcome	Undeserved positive outcome	Deserved negative outcome	Undeserved negative outcome
Pleasure	Anger	Schadenfreude	Sadness
Admiration	Resentment		Sympathy
	Surprise		Surprise

Intensity of emotions should vary depending on variables that moderate degree of deservingness or undeservingness and also on the strength of the positive or negative evaluations assigned to actions and their outcomes

These predictions have now been tested in a number of studies. There is now widespread support for the prediction that a person will feel happier or experience *schadenfreude* when another person’s failure or negative outcome is perceived to be deserved (e.g., Feather 2006, 2008a, b, in press; Feather and Nairn 2005; Feather and McKee 2009; Feather et al. 2011; Feather and Sherman 2002). Likewise there is empirical support for the prediction that another person’s undeserved positive outcome is associated with resentment about that person’s success, and also support for a positive link between that resentment and *schadenfreude* when that person subsequently suffers failure (Feather 2008a, in press; Feather and Nairn 2005; Feather and McKee 2009; Feather et al. 2011; Feather and Sherman 2002). Resentment is a form of anger that involves a feeling of injustice and people usually feel some degree of resentment when this perceived injustice is reflected in another’s undeserved positive outcome.

Other research has supported predictions from Table 1 that relate to pleasure/admiration and sympathy. For example, Feather et al. (2011) showed that participants reported more pleasure/admiration when a person’s success was perceived to be deserved. In contrast, sympathy for the other person came into play when the other person’s negative outcome was perceived to be undeserved (e.g., Feather 2006, in press; Feather et al. 2011; Feather and Sherman 2002).

The present study brings all of these deservingness-related emotions together providing a context that investigates their combined effects. It also includes the emotions of envy and pain of inferiority that other investigators have proposed are related to *schadenfreude* (Leach and Spears 2008; Smith et al. 2009). We conceive of pain of inferiority as an emotion that is more apparent among those with low self-esteem. We propose that envy can take two forms, namely benign envy and hostile envy, a proposal that is consistent with recent evidence (e.g., van de Ven et al. 2009).

Finally, the study enables the opportunity to replicate previous findings from our research program. Thus we

expected that schadenfreude would be greater when the other person was perceived to deserve a negative outcome, when there was more resentment about the person's undeserved prior success and when there was less sympathy for the other person in relation to a deserved negative outcome or failure.

Interpersonal and intergroup contexts

We also manipulated the social identity of the other person in the present study in terms of ingroup versus outgroup. In the deservingness model (Feather 1999a, b) ingroup/outgroup relations are part of the structures underlying perceived deservingness and undeservingness and their effects are assumed to be governed by the balance principle, involving a striving for structural consistency or coherence. Feather (1999a, b) proposed that these relations would influence perceived deservingness. For example, the model implies that an ingroup member's positive outcome would be perceived as more deserved than an outgroup member's positive outcome; conversely, an outgroup member's negative outcome would be perceived as more deserved than an ingroup member's negative outcome. Perceived deservingness as affected by ingroup/outgroup relations would then influence reactions to the outcome, including the emotions that are reported.

More relevant to the present study, theoretical models that emphasize different predictors and emotional processes relating to schadenfreude commonly focus on different social contexts, interpersonal and intergroup (e.g., Feather 2006; Leach and Spears 2008). Therefore, the present study investigated relations between schadenfreude and the other variables in an ingroup and outgroup context, in order to test whether they differed between contexts.

Other theoretical approaches

The emotions just mentioned have also been investigated in research from other theoretical approaches relating to schadenfreude. Here we briefly describe these other theoretical approaches to the analysis of schadenfreude. They focus respectively on the role of envy, the pain of ingroup inferiority, and a striving for positive self-evaluation. We hypothesise about how these variables may be linked to schadenfreude, thus setting the scene for their inclusion in the structural model that we tested.

Where does *envy* fit into the picture? Envy is a complex emotion that has been the subject of a lot of conceptual analysis and research (e.g., Heider 1958; Salovey 1991; Smith 1991, 2008; Smith and Kim 2007). It is an emotion that involves social comparison, occurring when another's higher status is along a dimension that is relevant to self, involving an outcome that self lacks and would also like to

have. Some studies have shown that schadenfreude about another's negative outcome is stronger the more the other person is envied. People feel happier when an envied person suffers a misfortune (e.g., Brigham et al. 1997; Smith et al. 1996, 2009; van Dijk et al. 2006). However, the study by Feather and Sherman (2002) and research reported by Hareli and Weiner (2002) failed to find a relation between envy and schadenfreude. Feather and Sherman (2002) showed that it was resentment about another's undeserved success rather than envy that predicted schadenfreude.

The discrepant findings might be resolved by distinguishing between different forms of envy that are either hostile or benign (e.g., Feather 2012; Salovey 1991; Smith 1991, 2008; van de Ven et al. 2009). We conceive of hostile envy as the type of envy that is associated with feelings of resentment relating to an undeserved positive outcome. It is a blend of envy with resentment and anger. In contrast, we conceive of benign envy as the type of envy that is associated with admiration for the other person who has achieved a deserved positive outcome that is high on the ladder of achievement. It is a blend of envy with admiration for the other person's deserved success. As van de Ven et al. (2009) noted, "Benign envy is the more uplifting type of envy: people like and admire the comparison other more, want to be closer to this other person, and give more compliments than those experiencing malicious envy" (p. 425).

For van de Ven et al. (2009) both malicious envy and benign envy also involve feelings of frustration and inferiority. Our definitions focus more on blended emotions that respectively combine envy with resentment (hostile envy) and envy with admiration (benign envy). Hostile envy may then have positive effects on schadenfreude because it becomes linked with resentment about other's undeserved positive outcome; benign envy may have negative effects on schadenfreude via its independence from resentment and its association with admiration and the perception that the other person's high status on an important dimension of comparison is deserved. We included measures of hostile and benign envy in the present study to test this hypothesis.

Another theoretical approach by Leach and Spears (2008) has focused on *the pain of inferiority* as an important determinant of schadenfreude. Their research was concerned with the pain of ingroup inferiority associated with intergroup competition rather than with perceived inferiority at the personal level. They conceptualized "...intergroup schadenfreude as an unfolding emotional episode whereby unpleasant emotions about the self lead to a pleasant emotion about another party" (p. 1383). They drew upon ideas from the philosopher Nietzsche (1887/1967), and his discussion of *ressentiment* to propose that

“...the emotional pain individuals feel about their ingroup’s inferiority leads them to feel the pleasure of schadenfreude when a successful outgroup fails” (p. 1383).

Leach and Spears found in their structural analysis that an indirect pathway led to schadenfreude via the implied pain of inferiority and the externalized anger that would become salient following the success of another group in the domain of interest. In their research pain of inferiority emerged as the strongest determinant of schadenfreude about the other group’s subsequent failure when compared with other variables such as the perceived illegitimacy of the outgroup’s initial success and dislike of the outgroup. Consistent with the studies by Feather and Sherman (2002) and Hareli and Weiner (2002), envy about the outgroup’s success was not a significant predictor of schadenfreude.

We included a measure of pain of inferiority in the present study to test the hypothesis that pain of inferiority at the interpersonal level would have effects on schadenfreude via resentment about another person’s success and also via envy of the other person’s achievement. People who feel the pain of inferiority about their own comparatively lower outcomes may also feel more resentful and envious about another person’s success, leading to stronger feelings of pleasure or schadenfreude when the other person suffers failure. The results of studies by Feather (2008a) and Feather and Nairn (2005) are consistent with this prediction. They showed that one’s own low achievement status, that could reasonably be assumed to be associated with feelings of inferiority, was directly linked to schadenfreude and also via resentment about the other person’s previous undeserved success (see also Feather and Sherman 2002).

Finally, van Dijk et al. (2011) proposed that *striving for a positive self-evaluation* is an important motive for schadenfreude. A successful other person may pose a threat to one’s own self-evaluation when the social comparison is made in a domain that is important for self. A failure suffered by the other person may then help the person feel better about self, boosting their self-evaluation especially if that self-evaluation was low to begin with.

In the present study we included a measure of global self-esteem in order to investigate its effects on schadenfreude. Those who devalued self were expected to experience more schadenfreude when a successful other suffered failure. Research on the fall of “tall poppies” or high achievers is consistent with this prediction (Feather 1994, in press). We hypothesized that this relation would be mediated by pain of inferiority, with low self-esteem (a trait variable) predicting more pain of inferiority (an emotion variable) in the chain of events leading to schadenfreude.

It should be noted that all three theoretical approaches described in this section also recognize that perceived

deservingness is an important determinant of schadenfreude. They also refer to other emotions such as anger and sympathy. The different approaches differ in the main variable they focus upon (envy, pain of inferiority, or self evaluation). The present study makes an important contribution by investigating the effects of these variables in combination in terms of a structural model that also includes variables that have been the main focus of deservingness theory. In particular, we differentiate different emotions that relate to deservingness and self-esteem, keeping them separate and investigating their role as mediators of schadenfreude. In so doing we make an important distinction between justice cognitions and emotional responses that is in line with our previous research on deservingness and emotions (Feather 2006; Feather and McKee 2009; Feather et al. 2011).

Method

Participants

Participants were 170 undergraduate students (35 male, 132 female, 3 of unspecified gender) at Flinders University, South Australia who were recruited from an introductory psychology course as partial fulfilment of course requirements. Mean age of the total sample was 23.17 years ($SD = 7.93$).

Design and procedure

We used a 2×2 design with two levels of social identity (ingroup, outgroup) and two levels of deserve success (high, low). Participants were randomly assigned across the four experimental conditions. The manipulations of social identity and deserve success were introduced in initial scenarios describing a student’s positive achievements in the undergraduate psychology course. Subsequently, an epilogue was presented in which the student suffered failure when applying for entry into the highly competitive fourth-year Honours in Psychology program, thereby enabling the assessment of schadenfreude or pleasure about the student’s negative outcome.

Initial scenarios and items

Social identity was manipulated in the initial scenarios that described a third-year psychology student from either Flinders University (*ingroup*) or the University of Adelaide (*outgroup*) who obtained grades that were consistently good.

Two variations of the scenarios were used to manipulate the deservingness/undeservingness of the positive outcomes that were obtained. In the *high deserve success*

condition the student who obtained the high grades was described as putting in a lot of effort (working hard, revising lectures, completing assignments, diligently preparing for exams) and also as winning a highly prestigious internship for final year university students that provided the opportunity to travel overseas to America to spend 2 weeks in Washington D.C. discussing and learning about important cutting-edge ideas in psychology at present. This manipulation was assumed to provide a positive action (high effort) that produced a positive outcome (success) and to determine the perception that the student was personally responsible for the positive achievements and deserved the success.

In the *low deserve success* condition, the student who obtained the high grades was described as not expending much effort (not working hard, putting in little time and effort in revising lectures, often not completing assignments, and not putting much preparation into exams). This student was also described as winning the highly prestigious internship but it was stated in the scenario that the program set up to award the internship was coordinated by the student's father at either Flinders University or the University of Adelaide, depending on whether the student was either a Flinders student or an Adelaide student respectively. These manipulations (low effort; possible favored treatment of the student by the father) were introduced to provide a negative action (low effort) that produced a positive outcome (success) and to undermine the perception that the student was personally responsible for the positive achievements and thus less deserving of the success.

Participants then responded to items that included measures of pain of inferiority, envy, perceived responsibility, perceived deservingness and resentment in that order. All items used 1 to 7 rating scales with most end-labels ranging from *Not at all* (scored 1) to *Very much* (scored 7). The items used to measure responsibility, deservingness, and resentment had been validated in previous studies in the research program (e.g., Feather 2008a, b; Feather et al. 2011; Feather and Sherman 2002).

Pain of inferiority

Six items asked participants how inferior, threatened, frustrated, ashamed, inadequate, and second-rate they felt, based on what they had read about the student in the scenario. The first four items were used by Leach and Spears (2008). We added the last two. A principal components analysis of the intercorrelations between the ratings for the six items provided a one-factor solution that accounted for 61.61 % of the variance. The pain of inferiority score for each participant was the mean rating across the six items ($\alpha = .87$).

Envy and resentment

Four items were used to measure benign and hostile envy respectively. The two items designed to measure benign envy asked participants how much they would want to be like the student in the scenario and how much they admired the student. We assumed that students would want to be like and admire a high achieving other student in a comparative domain that was relevant to their own goals (doing well in their course and achieving other rewards) and that they would report benign envy in this context. This way of defining benign envy is consistent with our previous discussion.

The two items designed to measure hostile envy asked how envious and jealous participants felt about the student in the scenario. We assumed that these two items would be more likely to tap a more negative or hostile form of envy in the comparative context of the other person's high achievement. Being envious and jealous usually has negative connotations in the absence of qualifying conditions that transform it into a more benign form.

Three items were used to measure resentment toward the student in the scenario. These respective items asked how angry, indignant, and resentful participants felt about the student in the scenario.

A principal components analysis of the intercorrelations between the ratings for the seven envy and resentment items provided a three-factor solution based on a scree test. The three factors accounted for 84.27 % of the variance. The first factor accounted for 47.22 % of the variance and comprised the three resentment items (factor loadings are in parentheses): angry (.91), indignant (.91), resentful (.83). The second factor accounted for 23.84 % of the variance and comprised the two benign envy items: admire (.86) and "be like" (.81). The third factor accounted for 13.21 % of the variance and comprised the two hostile envy items: envious (.94) and jealous (.83).

Thus we were able to provide validation for distinguishing between resentment, benign envy, and hostile envy. The score for each variable for each participant was the mean rating across the respective items. The reliabilities were as follows: resentment ($\alpha = .90$), benign envy ($\alpha = .75$), hostile envy ($\alpha = .79$).

Responsibility

Four items were used to measure the student's perceived responsibility for the positive outcomes that the student obtained. Two items respectively asked how much the student's grades and selection into the internship program were due to his/her own actions. The other two items asked how much was the student personally responsible for his/her academic grades and for selection into the internship program.

A principal components analysis of the interrelations between the ratings for these four items provided a one-factor solution that accounted for 85.76 % of the variance. The perceived responsibility score for each participant was the mean rating across the four items ($\alpha = .94$).

Deservingness

Six items were used to measure how much the student deserved the positive outcomes that he/she obtained. These items asked how much the student deserved his/her academic grades, how much he/she earned them, to what extent they were merited, how much the student deserved selection into the internship program, how much he/she earned this selection, and whether this selection was fair.

A principal components analysis of the intercorrelations between the ratings for these six items provided a one-factor solution that accounted for 84.61 % of the variance. The perceived deservingness score for each participant was the mean rating across the six items ($\alpha = .96$).

Epilogue scenario and items

After responding to the items that related to the initial scenario that they read, participants were presented with an epilogue that described the Flinders or Adelaide student as applying for entry to study Honours in Psychology at Flinders University. They were told in the epilogue that entry into the Honours program was not restricted only to Flinders students, that it was highly competitive and that "...good grades do not guarantee entry into the program, as there is only a certain quota of students that can be taken each year". They were then told that the student's application was not successful and that the student had not been offered a place in the Honours in Psychology program.

Following the epilogue participants responded to questions designed to measure *schadenfreude*, anger about the student's failure, the student's deservingness of the failure, the student's responsibility for the failure, and sympathy for the student in that order. Again these items used 1–7 rating scales with end-labels ranging from *Not at all* (scored 1) to *Very* (scored 7). The items defining these variables had been validated in previous studies in our research program (e.g., Feather 2008a, b; Feather et al. 2011; Feather and Sherman 2002).

Schadenfreude

Three items were used to measure *schadenfreude*. These items respectively asked participants how happy, satisfied, and pleased they felt that the student was not accepted into the Honours program.

A principal components analysis of the intercorrelations of the ratings for these three items provided a one-factor solution that accounted for 87.59 % of the variance. The score for *schadenfreude* for each participant was the mean rating across the three items ($\alpha = .93$).

Anger about failure

Three items were used to measure how angry participants felt about the student's failure to be accepted into the Honours program. These items respectively asked how annoyed, angry, and resentful participants felt about the failure.

A principal components analysis of the intercorrelations of the ratings for these three items provided a one-factor solution that accounted for 83.04 % of the variance. The score for anger about failure for each participant was the mean rating across the three items ($\alpha = .90$).

Deserve failure

Three items were used to measure how much the student was perceived to deserve the failure. These items respectively asked whether the student's failure to be admitted into the Honours program was a fair and deserved negative outcome and whether the failure was justified.

A principal components analysis of the intercorrelations of the ratings for these three items provided a one-factor solution that accounted for 75.80 % of the variance. The score for *deserve failure* for each participant was the mean rating across the three items ($\alpha = .84$).

Responsibility for failure

Two items were used to measure the student's perceived responsibility for failure. These items respectively asked whether the student was personally responsible and was to blame for failing to be accepted into the Honours program. The score for perceived responsibility for failure was the mean rating across the two items ($\alpha = .90$).

Sympathy

Two items were used measure sympathy. These items respectively asked how sympathetic and how sorry participants felt about the student's failure to be accepted into the Honours program. The score for sympathy was the mean rating across the two items ($\alpha = .93$).

Self-esteem

Following the epilogue items participants completed a 10-item measure designed to measure global self-esteem (Rosenberg 1965). The internal reliability was $\alpha = .90$.

Results

We first report the effects of the experimental manipulations before reporting the analysis that led to the structural model that contained the variables common to both the ingroup and the outgroup membership conditions.

Effects of deserve success manipulation

Table 2 presents the means and the results of ANOVAs for each variable in relation to the manipulation of social identity (Flinders University, Adelaide University) and deserve success (low, high). Table 2 shows that the deserve success manipulation was successful in producing much higher ratings of deservingness in the high deserve success condition for the positive outcomes as described in the initial scenario. Consistent with deservingness theory, perceived deservingness of the initial success was higher when the student displayed high effort in achieving his or her grades and won the internship on his or her own merits without any possible external influence from the father. Perceived deservingness was lower when the student displayed less effort and when obtaining the internship could be attributed to the influence of the father who was a member of the coordinating committee. Table 2 also shows that these differences in perceived deservingness were also reflected in differences in the student's perceived responsibility for the initial positive outcome. As noted previously, deservingness theory (Feather 1999a, b, 2006, in

press) assumes some degree of personal responsibility for outcomes and deservingness would be lower with reduced responsibility for the success and the subsequent failure.

Table 2 also shows that participants provided higher ratings of benign envy relating to the successful student in the high deserve success condition and more resentment of the student's success in the low deserve success condition. No differences were found for hostile envy or for pain of inferiority. Thus participants were envious of the student who worked hard and obtained high grades and entry to the internship, but this envy was benign and not hostile, reflecting admiration and a wish to be like the high achieving student. They resented the student who obtained the high rewards without much effort and with possible outside assistance in the case of obtaining the internship.

The deserve success manipulation in the initial scenario also had highly significant effects on the variables that were assessed after the epilogue. Participants rated the student as more deserving of the failure to be admitted to the Honours program and more responsible for the failure in the low deserve success condition than in the high deserve success condition. Consistent with the findings that were reviewed previously, schadenfreude was higher in the low deserve success condition where the student was also perceived as more deserving of failure. Participants also reported more anger and sympathy for the student in the high deserve success condition who failed entry into the Honours program.

Table 2 Means for experimental conditions and results of ANOVAs

Variable	Flinders		Adelaide		F values		
	Low deserve success	High deserve success	Low deserve success	High deserve success	University (A)	Effort (B)	A × B
Initial scenario							
Deservingness	3.00	6.40	2.91	6.22	.83	505.91***	.10
Responsibility	3.32	6.37	3.08	6.24	1.27	367.12***	.10
Pain of inferiority	3.35	3.14	3.26	2.81	.86	2.05	.29
Hostile envy	3.87	3.85	3.78	3.92	.00	.05	.08
Benign envy	2.90	5.29	2.72	5.17	.53	136.30***	.02
Resentment	3.76	2.15	3.38	1.91	2.05	50.03***	.11
Epilogue scenario							
Schadenfreude	3.47	1.81	4.16	2.87	15.76***	44.96***	.71
Deserve failure	4.41	2.85	4.78	3.23	3.66	65.29***	.00
Responsibility for failure	4.99	2.70	4.71	3.15	.16	75.95***	2.75
Anger about failure	2.32	3.98	1.83	3.19	10.31**	57.13**	.59
Sympathy	3.84	5.59	2.76	4.88	15.99***	74.68***	.74

Ns varied between 167 and 169 due to minor missing cases

** $p < .01$; *** $p < .001$

Effects of social identity manipulation

There were no statistically significant effects of university membership on the variables that were assessed following the initial scenario. In particular, university membership had no significant effects on deservingness for the initial success. However, this social identity variable did have the predicted effect on schadenfreude. The participants, all of whom were Flinders students, reported greater pleasure when the student who failed entry into Honours came from Adelaide University rather than from Flinders University. They also reported more anger and sympathy for the Flinders student who failed. Participants also rated the Flinders student in the epilogue as less deserving of failure when compared with the Adelaide student, but this difference just failed to be statistically significant, $F(1, 163) = 3.66, p = .057$.

Structural analysis

In order to investigate the structure of relations between variables assessed in the present study, we conducted an analysis using structural equation modelling (AMOS 18) including multi-group comparison to test for the invariance of the model between the ingroup and outgroup conditions. Specifically, we tested a path model that incorporated all the theoretically plausible relations we discussed previously. That is, deserve success and self-esteem had paths to pain of inferiority; all of these three variables had paths to resentment, hostile envy, and benign envy; all six variables had paths to deserve failure, sympathy and schadenfreude; deserve failure was linked to sympathy, and both had paths to schadenfreude. Further, residuals were set to covary between resentment, hostile envy and benign envy; and between deserve success and self-esteem. Table 3 presents

the correlations for the total sample that were used in the structural analysis.

The unconstrained model was fully identified and therefore had perfect fit. However, compared to this baseline model, we used the multi-group comparison function to investigate whether ingroup and outgroup conditions differed overall in the structural relations. A multi-group model that constrained all structural paths to be equal between ingroup and outgroup conditions had an excellent fit; $\chi^2 = 20.51, df = 32, ns, p = .942$; RMSEA = .000; CFI = 1.000; NFI = .971. Thus, a χ^2 -difference test compared to the baseline model was obviously also non-significant, indicating that the structural relations were equivalent between the ingroup and outgroup conditions. The significant paths for this model are shown in Fig. 1.

The results show that the effects of self-esteem and deserve success on schadenfreude were mediated through pain of inferiority, resentment, benign envy, deserve failure, and sympathy about failure. Hostile envy was linked to pain of inferiority. It was also linked to benign envy in relation to correlated errors.

The significant paths in Fig. 1 are generally consistent with hypotheses. They show multiple indirect paths through to schadenfreude. The high deserve success manipulation had a negative link to resentment (more deserve success/less resentment) which in turn had a positive link to schadenfreude (more resentment/more schadenfreude). High deserve success also had a negative link to deserve failure (more deserve success/less deserve failure) and a positive link to benign envy (more deserve success/more benign envy). Benign envy had a negative link to deserve failure (more benign envy/less deserve failure) and a positive link to sympathy (more benign envy/more sympathy). Schadenfreude was positively linked to deserve failure (more deserve failure/more schadenfreude)

Table 3 Correlations between variables used in structural modelling

Variable	University	Deserve success	Self-esteem	Pain of inferiority	Hostile envy	Benign envy	Resentment	Deserve failure	Sympathy failure	Schadenfreude
University	–	–.00	.18*	–.08	–.00	–.05	–.10	.13	–.26***	.26***
Deserve success		–	–.08	–.11	.02	.67***	–.48***	–.53***	.54***	–.45***
Self-esteem			–	–.46***	–.25***	–.19*	–.14	.12	–.11	.08
Pain of inferiority				–	.64***	.09***	.54***	.02	–.01	.23**
Hostile envy					–	.34***	.42***	–.03	.13	.16*
Benign envy						–	–.32***	–.49***	.56***	–.32***
Resentment							–	.31***	–.31***	.49***
Deserve failure								–	–.60***	.53***
Sympathy failure									–	.57***

Ns varied from 163 to 168 due to minor missing cases. University membership was coded: Flinders = 1, Adelaide = 2

* $p < .05$; ** $p < .01$; *** $p < .001$. Two-tailed tests were used

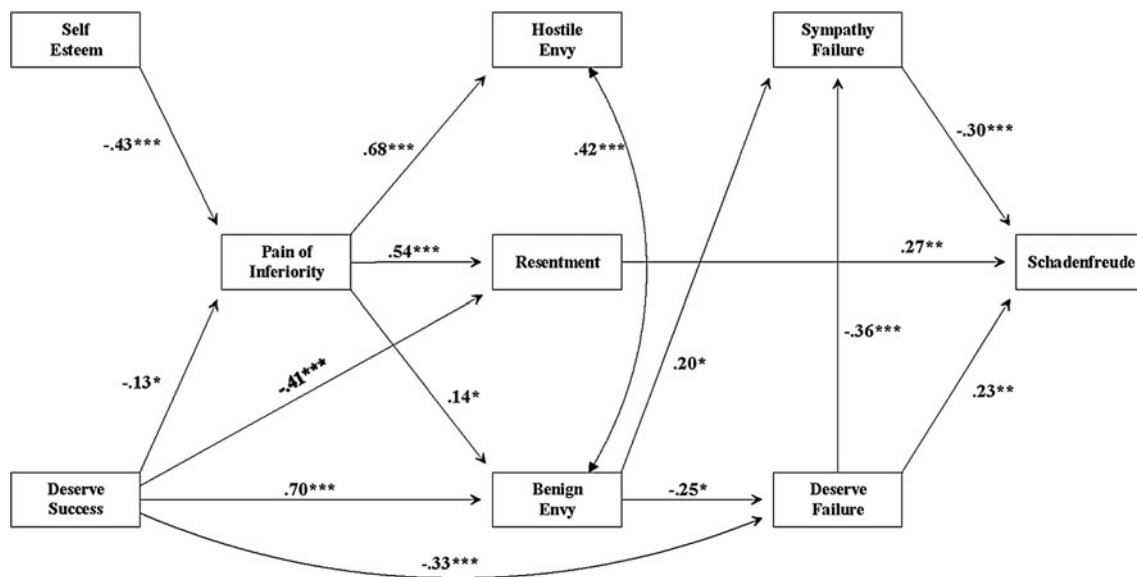


Fig. 1 Path diagram presenting standardised path coefficients and significant paths linking global self-esteem and deserve success to schadenfreude via the mediating variables. Deserve success was coded 1 = low, 2 = high. * $p < .05$; ** $p < .01$; *** $p < .001$

and negatively linked to sympathy (more sympathy/less schadenfreude).

The self-esteem variable had a negative link to pain of inferiority (higher self-esteem/less pain of inferiority) which in turn had strong positive links to both hostile envy and resentment (more pain of inferiority/more hostile envy and more resentment) and a weaker positive link to benign envy (more pain of inferiority/more benign envy).

Discussion

The results of the present study provide new information about variables that affect schadenfreude. As noted previously, this emotion has been the subject of theoretical analyses that focus on different variables, some at the individual level and some at the group level. Our results integrate these different approaches, bringing them together in the one structural model that we showed was invariant between the ingroup and the outgroup membership conditions. Thus, deservingness featured as an important variable in line with past findings (e.g., Feather 2006, 2008a, b, in press; Feather and Nairn 2005; Feather and Sherman 2002). As predicted, schadenfreude was stronger and sympathy was weaker the more the student was judged as deserving of failure. Schadenfreude was also stronger the more resentful participants were of the student's initial success. This resentment was stronger for the student in the low deserve success condition. It was also stronger among participants who reported higher levels of

pain of inferiority. In turn, pain of inferiority was stronger among participants with lower global self-esteem.

These latter results incorporate variables that relate to research by Leach and Spears (2008) on the pain of ingroup inferiority and by van Dijk et al. (2011) in research on the striving for a positive self-evaluation. Thus, although deservingness emerged as an important variable from our results, it had its effects in combination with these other variables that were also part of the complex structure of relations linking to schadenfreude.

The integrative contribution of the present study also extends to the role of envy in the analysis of schadenfreude. Our results show that it is important to distinguish between hostile envy and benign envy, a distinction that other researchers have also made (e.g., Salovey 1991; Smith 1991, 2008; Smith and Kim 2007; van de Ven 2009; van de Ven et al. 2009). We were able to distinguish empirically between these two kinds of envy and to investigate their effects on schadenfreude. Benign envy had a strong link to the deserve success manipulation. Participants reported benign envy toward the student in the high deserve success condition where the student's success in obtaining high grades and in being selected for the internship was perceived to be more deserved. They reported more resentment toward the student in the low deserve success condition where the student's success was perceived to be less deserved. Benign envy then had its effects on schadenfreude via a positive link to sympathy for the student who failed to be admitted to Honours and via a negative link to deserving this failure. Hostile envy had no

path linking it to the deserve success manipulation but it did have a strong link to pain of inferiority, in contrast to benign envy that had a much weaker link. Hostile envy did not have a direct link to schadenfreude but resentment may be part of its emotional blend that affects schadenfreude.

As noted previously, some past research found that schadenfreude was positively related to envy in undifferentiated form (e.g., Brigham et al. 1997; Smith et al. 1996, 2009; van Dijk et al. 2006). Other research found that schadenfreude was not related to undifferentiated envy (Feather and Sherman 2002; Hareli and Weiner 2002; Leach and Spears 2008). Instead, Feather and Sherman (2002) emphasized the role of deservingness and resentment as variables that affect schadenfreude (see also Feather 2008a; Feather and Nairn 2005). The present results provide some resolution of these conflicting findings. They imply that past disagreements have been due to a failure to differentiate between benign envy and hostile envy and that progress will be made when these two forms of envy are separated. In our analysis, hostile envy is a form of envy that is blended with resentment and anger; benign envy is a form of envy that is blended with admiration and wanting to be like the envied person. These two forms of envy should be considered along with resentment as emotions in the causal chain of events that result in expressions of schadenfreude. We have taken an important step in this direction in the present study.

Our major focus in this investigation was on the manipulation of perceived deservingness and its links to schadenfreude via emotional responses. We believe that it is important to differentiate the emotions relating to deservingness and schadenfreude so as to investigate their separate and combined effects. Future studies are required that manipulate other variables. For example, differences in envy could be produced by manipulating the other person's high or low status relative to self. Some relevant studies have already been conducted (e.g., Feather 2008a; Feather and Nairn 2005; Feather and Sherman 2002) but more are needed across a variety of different contexts (e.g., within organizations). There is little doubt, however, that perceived deservingness will emerge as a key variable.

Our results contribute new information about the effects of group membership or social identity on schadenfreude. The results showed that ingroup/outgroup membership, defined by the student's membership at either Flinders University or the University of Adelaide, was associated with differences in the strength of the emotions that participants reported after the student in the scenario failed entry into the Honours program. Participants, all of whom were Flinders students, were more pleased when the outgroup Adelaide student failed when compared with the ingroup Flinders student in the scenario. That is, they reported more schadenfreude. They were also more

sympathetic toward the Flinders student and more angry about his/her failure. These differences were independent of the strong effects of the deserve success manipulation (see Table 2) and they are consistent with social identity theory and the assumption of ingroup favoritism (Tajfel and Turner 1986). There was also a trend toward rating the outgroup Adelaide student as more deserving of failure. These differences did not extend to emotional responses to the student's initial success. They were limited to the failure condition. Importantly, the ingroup/outgroup manipulation did not moderate or produce differences in the structural analysis (Fig. 1).

Stronger effects of ingroup/outgroup membership on emotions may be found in competitive situations involving social comparison where social identity is clearly salient and where status differences exist in relation to performance outcomes (e.g., a high achiever at university or a low achiever; a high status person in an organization or a low status person). At the group level, lower performance status may be associated with feelings of inferiority that influence schadenfreude when a successful higher status outgroup fails (e.g., Leach and Spears 2008). In our own research program on tall poppies, performance status played a part but usually in association with deservingness (e.g., Feather 1999a, 2008a; Feather and Nairn 2005; Feather and Sherman 2002). Undeserved low status was resented and this resentment fed into resentment associated with a high achiever's undeserved success, linking to schadenfreude when the high achiever subsequently failed (e.g., Feather 2008a). We did not manipulate ingroup/outgroup membership in these studies. Nor did we assess feelings of inferiority. However, in the present study feelings of inferiority were higher for participants who were lower in global self-esteem which is a kind of indirect status variable at the personal level.

This discussion implies that we should extend studies of schadenfreude to contexts such as organizations and other settings where status differences exist and where these status differences are linked to ingroup/outgroup membership in a fully crossed manner (e.g., high status/ingroup, low status/ingroup, high status/outgroup, low status/outgroup). For example, in organisations one could investigate schadenfreude in relation to the negative outcomes of workplace colleagues and higher status supervisors who vary both in status and group membership, and also extend the research to other emotions such as resentment, envy, and sympathy.

The fact that group membership did not moderate some of the links reported in the structural model may also be a product of the student context used in the study. The manipulation of social identity that involved a Flinders University student (ingroup) versus an Adelaide University student (outgroup) may not have been strong enough. The

student participants in the study may have perceived themselves as possessing a common student identity that would override the effects of group differences that would be reflected in a positive ingroup bias. They may also have shown empathy with the outgroup student who suffered the negative outcome in the epilogue scenario. Note, however, that social identity effects (Flinders versus Adelaide) were obtained for the emotions relating to each student's failure to be selected into the Honours program, including sympathy and *schadenfreude* (Table 2). No social identity effects were obtained for variables relating to the student's success in the initial scenario. This difference may be interpreted as due to the fact that students were competing for the same valued goal (entry to the Honours program at Flinders University), a competition that could involve both Flinders and Adelaide students. Thus, the social identity of the student would be salient because the students were in competition for the same desired outcome. In the case of the prior successful outcomes, however, there was no competition between Flinders and Adelaide students. Any competition for the high grades or selection for the internship would be within the same group. It would be ingroup competition rather than competition involving ingroup versus outgroup. Hence social identity involving group differences would not be as salient in this context.

We used hypothetical scenarios in the present study in order to achieve controlled manipulation of deservingness. Use of hypothetical scenarios has been criticized on the grounds that responses to them may reflect participants' theories about what should happen rather than their actual beliefs and feelings (Parkinson and Manstead 1993). We feel that this criticism may be overdrawn because the responses made by participants presumably have some basis in a person's own experience with positive and negative outcomes in their lives. Moreover, research by Robinson and Clore (2001) suggests that findings from studies that use hypothetical scenarios tend to be consistent with findings that investigated actual emotional experiences. The present findings are also consistent with those from our previous studies that used other methodologies in our research program (e.g., retrospective reports; studies involving actual high-profile persons) with results that also underline the importance of perceived deservingness (e.g., Feather 1999a, b, 2006, in press; Feather and McKee 2009). Finally, the scenarios used in the present study were realistic and highly relevant to students. Most of the student participants would perceive selection into the Honours program as highly desirable and as meeting their own aspirations.

In conclusion, the present study contributes to the understanding of *schadenfreude* or pleasure in another's misfortune by providing new information about the effects of social identity and perceived deservingness on a

differentiated set of emotions and by integrating variables from different research areas into the one conceptual framework. We were able to show that the structural model that emerged from our analysis was invariant between the ingroup and outgroup conditions. We also clarified the role of envy and resentment in regard to *schadenfreude*. Future studies are needed that investigate the generality of these findings, especially in real-life contexts such as organisations and other contexts where people react to the negative outcomes or failures of others. The present study provides strong results and a plausible framework that should help to guide research in the future.

References

- Brigham, N. L., Kelso, K. A., Jackson, M. A., & Smith, R. H. (1997). The roles of invidious comparisons and deservingness in sympathy and *Schadenfreude*. *Basic and Applied Social Psychology*, *19*, 363–380.
- Feather, N. T. (1994). Attitudes toward high achievers and reactions to their fall. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 26, pp. 1–73). San Diego, CA: Academic Press.
- Feather, N. T. (1999a). Judgments of deservingness: Studies in the psychology of justice and achievement. *Personality and Social Psychology Review*, *3*, 86–107.
- Feather, N. T. (1999b). *Values, achievement and justice: Studies in the psychology of deservingness*. New York: Kluwer Academic/Plenum Press.
- Feather, N. T. (2006). Deservingness and emotions: Applying the structural model of deservingness to the analysis of affective reactions to outcomes. *European Review of Social Psychology*, *17*, 38–73.
- Feather, N. T. (2008a). Effects of observer's own status on reactions to a high achiever's failure: Deservingness, resentment, *schadenfreude*, and sympathy. *Australian Journal of Psychology*, *60*, 31–43.
- Feather, N. T. (2008b). Perceived legitimacy of a promotion decision in relation to deservingness, entitlement, and resentment in the context of affirmative action and performance. *Journal of Applied Social Psychology*, *38*, 1230–1254.
- Feather, N. T. (2012). Tall poppies, deservingness, and *schadenfreude*. *The Psychologist*, *6*, 434–437.
- Feather, N. T. (in press). Deservingness and *schadenfreude*. To appear in W. W. van Dijk & J. W. Ouwerkerk (Eds.), *Schadenfreude: Understanding pleasure at the misfortune of others*. Cambridge, UK: Cambridge University Press.
- Feather, N. T., & McKee, I. R. (2009). Differentiating emotions in relation to deserved or undeserved outcomes: A retrospective study of real-life events. *Cognition and Emotion*, *23*, 955–977.
- Feather, N. T., McKee, I. R., & Bekker, N. (2011). Deservingness and emotions: Testing a structural model that relates discrete emotions to the perceived deservingness of positive or negative outcomes. *Motivation and Emotion*, *35*, 1–13.
- Feather, N. T., & Nairn, K. (2005). Resentment, envy, *schadenfreude*, and sympathy: Effects of own and other's deserved or undeserved status. *Australian Journal of Psychology*, *57*, 87–102.
- Feather, N. T., & Sherman, R. (2002). Envy, resentment, *Schadenfreude*, and sympathy: Reactions to deserved and undeserved

- achievement and subsequent failure. *Personality and Social Psychology Bulletin*, 28, 953–961.
- Hareli, S., & Weiner, B. (2002). Dislike and envy as antecedents of pleasure at another's misfortune. *Motivation and Emotion*, 26, 257–277.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Leach, C. W., & Spears, R. (2008). "A vengefulness of the impotent": The pain of in-group inferiority and schadenfreude toward successful out-groups. *Journal of Personality and Social Psychology*, 95, 1383–1396.
- Nietzsche, F. (1967). *On the genealogy of morals* (W. Kaufmann & R. Hollingdale, Trans.). New York: Random House (original work published in 1887).
- Parkinson, B., & Manstead, A. S. R. (1993). Making sense of stories and social life. *Cognition and Emotion*, 7, 295–323.
- Robinson, M. D., & Clore, G. L. (2001). Simulation, scenarios, and emotional appraisal: Testing the convergence of real and imagined reactions to emotional stimuli. *Personality and Social Psychology Bulletin*, 27, 1520–1532.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Salovey, P. (1991). *The psychology of envy and jealousy*. New York: Guilford.
- Smith, R. H. (1991). Envy and the sense of injustice In P. Salovey (Ed.), *The psychology of envy and jealousy* (pp. 79–99). New York: Guilford Press.
- Smith, R. H. (Ed.). (2008). *Envy: Theory and research*. Oxford: Oxford University Press.
- Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin*, 133, 46–64.
- Smith, R. H., Powell, C. A. J., Combs, D. J. Y., & Schurtz, D. R. (2009). Exploring the when and the why of *Schadenfreude*. *Social and Personality Psychology Compass*, 3, 530–546.
- Smith, R. H., Turner, T. J., Garonzik, R., Leach, C. W., Urch-Druskat, V., & Weston, C. M. (1996). Envy and *schadenfreude*. *Personality and Social Psychology Bulletin*, 25, 158–168.
- Tajfel, H., & Turner, J. C. (1986). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks-Cole.
- van de Ven, N. (2009). *The bright side of a deadly sin: The psychology of envy*. Kurt Lewin Institute Dissertation Series.
- van de Ven, N., Zeelenberg, M., & Pieters, R. (2009). Leveling up and down: The experiences of benign and malicious envy. *Emotion*, 9, 419–429.
- van Dijk, W. W., Ouwerkerk, J. W., Goslinga, S., Nieweg, M., & Galluci, M. (2006). When people fall from grace: Reconsidering the role of envy in *schadenfreude*. *Emotion*, 6, 156–160.
- van Dijk, W. W., Ouwerkerk, J. W., Wesseling, Y. M., & van Konigsbruggen, G. M. (2011). Towards understanding pleasure at the misfortunes of others: The impact of self-evaluation threat on *schadenfreude*. *Cognition and Emotion*, 25, 360–368.