

# Predicting pleasure at others' misfortune: Morality trumps sociability and competence in driving deservingness and schadenfreude

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**Abstract** Schadenfreude occurs when people feel pleasure at others' misfortunes. Previous research suggested that individuals feel such a malicious pleasure when the misfortune befalls social targets perceived as highly competent but lacking human warmth. Two experiments explored whether the two components of warmth (i.e., sociability and morality) have distinct roles in driving schadenfreude. Study 1 ( $N = 128$ ) compared a competent but immoral individual to a competent but unsociable person and found that people felt more schadenfreude when a misfortune befell an individual lacking morality. Study 2 ( $N = 199$ ) confirmed the primary role of morality in driving schadenfreude by manipulating not only morality and sociability, but also competence. Moreover, both experiments showed that social targets lacking moral qualities elicited higher levels of schadenfreude because their misfortunes were perceived as deserved. Overall, our findings suggest that morality has a primary role over other basic dimensions of person perception (i.e., sociability and competence) in driving schadenfreude.

**Keywords** Emotion · Schadenfreude · Social cognition · Morality · Sociability · Competence

## Introduction

The term schadenfreude indicates the malicious joy people feel when other individuals or groups suffer misfortune (Heider 1958; Leach et al. 2003; Smith et al. 2009; Van Dijk and Ouwerkerk 2014). A good deal of work has provided important insights into the conditions that elicit this emotion, revealing that it stems, for instance, when observers gain from the others' failure (Smith et al. 2006). In a similar vein, schadenfreude is evoked by misfortunes befalling envied targets (Smith et al. 1996; Van Dijk et al. 2006) disliked targets (Hareli and Weiner 2002), or when another's misfortune is perceived as deserved (Feather and Sherman 2002; Van Dijk et al. 2005).

A more recent line of research has shown that schadenfreude is elicited by mere information regarding the characteristics of those suffering failures. Indeed, people feel joy when a setback occurs to high-status and competitive targets, as they are envied for their high competence and low warmth (Cikara and Fiske 2012, 2013). Integrating these findings with recent evidence showing that warmth encompasses two distinct evaluative components (i.e., sociability and morality), we argue that the moral character of those who suffer the misfortune should have a leading and dominant role over other basic dimensions of social perception (i.e., sociability and competence) in driving schadenfreude. However, although schadenfreude has been considered a moral wrong feeling because it violates the obligation to feel compassion (Van Dijk and Ouwerkerk 2014), no prior research has investigated whether the moral qualities ascribed to an individual person have a prominent role over other qualities in driving the pleasure at his/her failure. Thus, in light of recent research showing the distinctive role of moral characteristics in shaping social perception (Brambilla and

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Leach 2014), we tested the hypothesis that morality should be key in driving *schadenfreude* and that people are more prone to be pleased when a setback befalls an individual who lacks morality.

### Morality and *schadenfreude*

Research has long noted that when people interact with others, they are mainly interested in responding to two critical questions basic to surviving in the social world. First, actors need to establish whether someone's intentions are beneficial or harmful, that is, whether they represent an opportunity or a threat; second, actors need to know others' capabilities, that is, whether they are able to pursue their intentions (Cuddy et al. 2008). These two evolutionary necessities correspond to perceptions of warmth and competence, respectively (Abele and Wojciszke 2014; Fiske et al. 2007). Whereas warmth pertains to benevolence in social relations and involves qualities such as friendliness, honesty, cooperativeness, and trustworthiness, competence refers to the power to perform and to influence others and involves qualities such as efficiency, intelligence, strength, and capability (Cuddy et al. 2008; Wojciszke 2005). Although under the guise of slightly different labels, warmth and competence have emerged as basic dimensions in person and group perception and together predict a wide range of emotional and behavioral responses (for a review, Fiske et al. 2007). Based on this distinction, research on group perception has shown that mere information on stereotype content is sufficient to elicit *schadenfreude*. Indeed, individuals feel *schadenfreude* when misfortune befalls envied social groups perceived as highly competent but lacking warmth (Cikara and Fiske 2012, 2013).

More recently, it has been shown that warmth comprises two distinct evaluative components, namely sociability and morality (Brambilla and Leach 2014; Brambilla et al. 2011; Goodwin et al. 2014; Leach et al. 2007). Whereas sociability pertains to being pleasant to people in ways that facilitate affectionate relations with them, morality pertains to being benevolent to people in ways that facilitate correct and principled relations with them (Brambilla and Leach 2014; Goodwin et al. 2014). Sociability involves traits like friendly, and kind, while morality involves traits like honest and trustworthy. Based on this distinction, research on person and group perception has revealed that sociability and morality have distinct roles in shaping social judgment and that morality tends to be far more important than sociability in determining the impressions we form of others (Brambilla and Leach 2014; Goodwin et al. 2014). Thus, individuals rate moral qualities as the most desirable characteristics for an ideal person to possess (Cottrell et al. 2007) and as crucial qualities to establish the other's

perceived intent in the social context (Brambilla et al. 2013). As a consequence, people lacking moral qualities are more easily avoided and kept at distance than individuals lacking other human qualities (Brambilla et al. 2016).

Building on the distinction between sociability and morality, the present research sought to extend prior work by investigating whether the moral character of an individual might be the key characteristic driving malicious pleasure at his/her failure. However, this has not been addressed by prior works, as they have tended to conflate, under the general label of "warmth", moral characteristics like honesty and trustworthiness and less moral but more sociable traits like kindness and friendliness (Cikara and Fiske 2012, 2013). Thus, such previous studies implicitly suggested that sociability and morality are equally important in shaping *schadenfreude*. Indeed, while existing studies have treated morality and sociability as separate in predicting impressions, they have not yet examined the relative importance of sociability and morality characteristics in driving *schadenfreude*. This might have obscured the fundamental role of morality in driving *schadenfreude*. Here, we sought to bridge this gap by investigating whether the sociability and morality components of warmth might play distinct roles in driving the malicious pleasure at others' misfortunes. By doing so, we further aimed at complementing and extending the studies assessing morality free of sociability in driving *schadenfreude* (see, Feather and McKee 2014; Powell and Smith 2013). Indeed, while these studies have shown that moral character predicts *schadenfreude*, they did not test whether the moral character of an individual has a leading role over other characteristics in driving malicious pleasure at his/her failure. Thus, our approach helped us to connect the literature on the sub-components of warmth with that on *schadenfreude*, as a way to extend prior work on the emotional implications of sociability and morality, as well as prior insights on the determinants of *schadenfreude*. Thus, we first tested whether *schadenfreude* is primarily driven by the sociability or morality characteristics ascribed to an individual. Furthermore, we investigated how the sub-components of warmth relate to competence in shaping *schadenfreude*. Although it has been shown that intelligence and high capability to achieve results is a key factor promoting *schadenfreude* (Brigham et al. 1997; Cikara and Fiske 2013; Feather 1989; Van Dijk et al. 2005; see also Smith 2013; Van Dijk and Ouwerkerk 2014), it is untested whether competence information is more important than sociability and morality information ascribed to a social target in driving pleasure at his/her failure.

We anticipated that the target's moral qualities should be the key predictor of the malicious feelings of *schadenfreude*. A good deal of work has revealed that

deservingness is the strongest predictor of the pleasure at others' misfortune (Feather 1994, 2006; Feather and Sherman 2002; Portman 2000) and the royal road to schadenfreude (Smith et al. 2009). Moreover, the more misfortune is perceived as deserved, the more it pleases the observer, as it reestablishes a sense of justice and fairness (see also, Lupfer and Gingrich 1999). Importantly, immoral targets are more disliked than other targets, as they pose a threat to the stability and the integrity of the whole community (Brambilla et al. 2013). Thus, immoral targets typically evoke more negative global impressions than others targets, as they promote unfair and unprincipled relations with others (Brambilla and Leach 2014). Consequently, immoral individuals and groups might be perceived as undeserving their achievements and success because they base their relationships with others on unfair and fraudulent bases (Brambilla and Leach 2014). In line with this reasoning, it has been shown that when the valence of the overall impression about an individual does not match the valence of the outcome occurred to that individual, such an outcome is perceived as undeserved. By contrast, when the valence of the overall impression matches the valence of the other's outcome, the actor is thought to be deserving of the outcome (Lupfer and Gingrich 1999). Considering that morality has a primary role (over sociability and competence) in shaping interpersonal impressions (Goodwin et al. 2014) and that immoral targets evoke more negative global impressions than others targets (Brambilla and Leach 2014), we anticipated that the more a target is perceived as immoral, the more his or her failure should be perceived as deserved, which in turn should trigger schadenfreude. Given that unsociable and competent targets do not build relationships with others on unfair and fraudulent bases and that sociability and competence are less relevant in shaping interpersonal impressions (Goodwin et al. 2014), misfortunes occurred to those targets should be perceived as less deserved and therefore should elicit lower levels of schadenfreude. In short, we expected that morality should be key in driving schadenfreude and that such a direction of influence from (im)morality to schadenfreude should be mediated by the perception of deserving the misfortune.

Our prediction fits with prior research on the link between schadenfreude and resentment. As such, it has been shown that deservingness predicts schadenfreude when resentment and dislike are salient. By contrast, such a link does not emerge when other negative emotions are salient (i.e., the general feeling of envy) (see, Feather and Sherman 2002; Feather et al. 2013; Hareli and Weiner 2002). Thus, combining research showing that immoral targets are more disliked than other targets (Brambilla and Leach 2014, for a review) with findings showing that the link between deservingness and schadenfreude emerges

when dislike is salient (Feather and Sherman 2002; Feather et al. 2013; Hareli and Weiner 2002), we argue that the predicted direction of influence from (im)morality to schadenfreude should be mediated by the perception of deserving the misfortune. We tested these predictions in two studies. In the first study we compared the levels of schadenfreude elicited by competent targets depicted as lacking either morality or sociability qualities, seeking support for the basic hypothesis that morality should be a stronger predictor of schadenfreude than sociability. In the second study, we tested whether morality trumps not only sociability, but also competence, in driving schadenfreude. Thus, in the second study, we manipulated competence, sociability, and morality information ascribed to an individual person.

## Experiment 1

Experiment 1 was designed as a first test of our hypothesis that morality should be a stronger predictor of schadenfreude than sociability. To do so, we tested whether people would experience more schadenfreude when a misfortune befalls a competent but immoral individual than a competent but unsociable person, by considering an allegedly real situation (for similar paradigms see: Van Dijk et al. 2011a, 2011b).

## Method

### Participants

An a priori power analysis was conducted for sample size estimation (using GPower 3.1; Faul et al. 2007). With an  $\alpha = .05$  and power = .80, the projected sample size needed to detect a medium effect size ( $d = .50$ ) is approximately  $N = 128$  for a between-groups comparison ( $t$  test, difference between two independent means and two groups). In total, we recruited 128 students ( $M = 25.62$ ;  $SD = 5.49$ ) in an experimental design that was subdivided into two groups.

### Materials and procedure

Participants were asked to fill out a questionnaire concerning academic life. Following recent works (Van Dijk et al. 2011a, 2011b) participants were presented with two academic documents. In the first document a male student was described as a highly competent, intelligent, and capable. As such, participants read the academic portfolio of the student showing his outstanding academic records. The document further reported an interview with the student's

internship advisor. Depending on the experimental condition, the interview detailed that the student was involved in a research internship and that his supervisor described him as either dishonest (low morality) or unfriendly (low sociability). Considering that competent and cold targets typically evoke envy (Fiske et al. 2007) and that envy is a determinant of schadenfreude (Smith et al. 1996), we asked participants to indicate the extent to which they envied the target (i.e., Thinking about your impression of the student described above please indicate the extent to which you feel envy toward him) using a 7-point scale, ranging from 1 (not at all) to 7 (extremely).

Next, participants read a second document, reporting a written interview with the student's thesis advisor. From this document participants learned that the student recently had suffered a setback, as the supervisor remarked that the student had given a very poor presentation of his thesis. Indeed, due to a technical problem he had to present the thesis without the laptop. Consequentially, he got a low mark. We then assessed participants' reactions to this misfortune. Three statements assessed deservingness of the misfortune (i.e., I find it just what happened; I find that what happened to the target is deserved; I find it right what happened to the target; alpha: .95) (see Van Dijk et al. 2005) while four statements assessed schadenfreude (i.e., I enjoy what happened to the target; I couldn't resist a little smile; What happened to that person amuses me; I am happy for what happened; alpha: .88) (see van Dijk et al. 2011b). Participants provided all their responses on 7-point scales, ranging from 1 (not at all) to 7 (extremely). We further included two items to check the effectiveness of our experimental manipulations. Indeed, participants rated the target on perceived morality (i.e., How likely is it that the target is moral?), and sociability (i.e., How likely is it that the target is sociable?) on seven-point scales ranging from 1 (not at all) to 7 (extremely). Finally, participants were thanked and debriefed.

## Results and discussion

### Manipulation check

To check the effectiveness of the manipulation, we conducted a 2 (manipulation: unsociable vs. immoral)  $\times$  2 (manipulation check items: sociability vs. morality) analysis of variance (ANOVA) with the first factor varying between-participants and the second factor varying within-participants. The analysis yielded an interaction effect  $F(1, 126) = 82.88, p = .001, \eta_p^2 = .39$ ; thus, in the unsociable condition participants rated the target as less sociable ( $M = 2.66, SD = .99$ ) than moral ( $M = 4.52, SD = 1.46$ ),  $t(63) = -9.06, p = .001$ . By contrast, in the immoral

condition participants rated the target as less moral ( $M = 3.16, SD = 1.43$ ) than sociable ( $M = 3.92, SD = .96$ ),  $t(63) = -3.77, p = .001$ . In sum, our manipulation was successful.

### Schadenfreude and deservingness

Preliminary analyses revealed that schadenfreude and deservingness scores were not normally distributed (skewness  $> 1$ ). Thus, we used a logarithmic transformation to normalize the distribution of scores. Next, a *t*-test confirmed participants experienced more schadenfreude in the immoral condition ( $M = .29, SD = .23$ ) than in the unsociable condition ( $M = .09, SD = .16$ ),  $t(125) = 5.35, p = .001, d = .95, 95\% \text{ CI} = [.58, 1.32]$ . In a similar vein, we found that participants perceived the misfortune as more deserved in the immoral condition ( $M = .41, SD = .25$ ) than in the unsociable condition ( $M = .12, SD = .21$ ),  $t(126) = 6.70, p = .001, d = .118, 95\% \text{ CI} = [.80, 1.55]$ .

### Mediational model

We next tested a mediational model (see Table 1 for the correlation between variables) using a bootstrapping procedure (Hayes 2013). We found that our manipulation (coded as unsociable = 0 and immoral = 1) predicted schadenfreude ( $B = .19, SE = .03, p = .001$ ). Moreover, our manipulation predicted deservingness scores ( $B = .28, SE = .04, p = .001$ ). When deservingness scores were included in the regression equation, they predicted schadenfreude ( $B = .43, SE = .07, p = .001$ ), whereas the direct effect of the manipulation on schadenfreude became marginally significant ( $B = .07, SE = .04, p = .07$ ). The analysis revealed that deservingness mediated the relationship between our manipulation and the subsequent reported schadenfreude ( $B = .12, SE = .03, 95\% \text{ CI} = [.07, .19], 5000 \text{ bootstrap resamples}$ ).

Further analyses revealed that participants experienced more envy (we used a logarithmic transformation to normalize the distribution of envy scores) in the immoral condition ( $M = .20, SD = .27$ ) than in the unsociable condition ( $M = .08, SD = .19$ ),  $t(126) = 2.84, p = .005$ ,

**Table 1** Correlation between variables (experiment 1)

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Manip			1			
2. Envy	.14	.24	.25**	1		
3. Deservingness	.27	.27	.51**	.17	1	
4. Schadenfreude	.19	.22	.43**	.09	.61**	1

\*\*  $p < .01$

$d = .50$ , 95 % CI = [.14, .85]. However, envy did not mediate the effect we found ( $B = -.01$ ,  $SE = .01$ , 95 % CI = [−.02, .02] and the mediational model remained significant even treating envy as a covariate.

Taken together, these findings showed that people experienced more schadenfreude when misfortune befell a competent but immoral individual than when it occurred to a similarly competent but unsociable person. Furthermore, we found the effect was driven by the perception that the misfortune occurred to an immoral individual was deserved.

## Experiment 2

Experiment 2 aimed to replicate the findings of experiment 1 by further manipulating competence information. Prior research has shown that individuals feel more joy when a setback befalls a highly competent student than an average student (Brigham et al. 1997; Van Dijk et al. 2005; see also Smith 2013; Van Dijk and Ouwerkerk 2014). Classic work by Feather (1989) further revealed that people reported feeling more pleased when the setback occurs to high achievers (or tall poppies). In a similar vein, although Cikara and Fiske (2012) found competent and cold targets elicit the most schadenfreude, they still found a main effect of competence. Hence, high status and competent targets elicit more schadenfreude than targets lacking competence and capability, confirming these traits promote schadenfreude. Based on the findings of experiment 1, experiment 2 investigated whether moral information ascribed to an individual target is more important, not only than sociability, but also than competence in driving pleasure at his failure. Thus, in experiment 2 we provided each participant with information about sociability, morality, and competence. In doing so, we further tested the possibility that morality plays a primary role in driving pleasure at others' misfortune. Accordingly, we devised a 2 (sociability: high vs. low)  $\times$  2 (morality: high vs. low)  $\times$  2 (competence: high vs. low) between-participants design.

## Method

### Participants

We run an a priori power analysis (using GPower 3.1; Faul et al. 2007) to assure that we had an adequate sample size to detect the presence of effects. With an alpha = .05 and power = .80, the projected sample size needed to detect a medium effect size ( $f = .20$ ) is  $N = 199$  (ANOVA, fixed effects, special, main effects and interactions). Thus, we

recruited 199 students (141 female;  $M = 22.18$ ;  $SD = 1.71$ ) in an experimental design that was subdivided into eight groups.

### Materials and procedure

To manipulate three dimensions simultaneously, we followed classic (for a review, Smith et al. 2009) and more recent (Takahashi et al. 2009; van de Ven et al. 2015) research on schadenfreude, and employed hypothetical scenarios. Indeed, by using a hypothetical context we were able to impose specific characteristics of an unknown target. In particular, participants were asked to fill out a questionnaire about social perception. More specifically, participants were first shown a target picture representing an unknown male individual. Next, participants read a table showing his characteristics. Specifically, participants read: "The person represented in the picture is an Italian guy who is 27 years-old. Below, we indicate the degree to which this individual has some characteristics. This person is...". Participants then read a table showing three traits of each dimension and, for each trait, its corresponding level ('high' or 'low') was marked. Depending on the experimental condition, the target was described as high (vs. low) in morality or as high (vs. low) in sociability or as high (vs. low) in competence. The order in which we presented morality, sociability, and competence information randomly varied between participants.

To manipulate morality, sociability, and competence information, we used nine traits (3 morality traits: honesty, sincerity, and trustworthiness; 3 sociability traits: friendliness, warmth, and likeability; 3 competence traits: competence, intelligence, and capability) carefully balanced for favorability (in order to rule out that our findings might be due to a general effect of valence; see Brambilla et al. 2012) and for their relatedness with the morality, sociability, and competence dimensions (see Brambilla et al. 2011; Leach et al. 2007; see also Leach et al. 2015). As in experiment 1, participants were asked to indicate the extent to which they envied the target using a 7-point scale, ranging from 1 (not at all) to 7 (extremely).

Next, we introduced the misfortune information. Participants learned the target has been selected for a job interview. Unfortunately, he missed the job interview because of a car accident occurred a couple of hours before the interview. Next, we assessed participants' reactions in terms of deservingness of the misfortune (alpha: .91) and schadenfreude (alpha: .85) following the procedure of the first experiment. Given that prior research has shown that immoral targets elicit more dislike than other targets (Brambilla and Leach 2014, for a review) and that deservingness predicts schadenfreude when dislike is made salient (see, Feather and Sherman 2002; Feather et al.

2013; Hareli and Weiner 2002), in experiment 2 participants were further asked to indicate the extent to which they disliked the target using a seven-point scale ranging from 1 (not at all disliked) to 7 (extremely disliked). Finally, given that we manipulated three dimensions simultaneously, we included three items to check the effectiveness of our experimental manipulations. Indeed, participants rated the target on perceived morality (i.e., How likely is it that the target is moral?), sociability (i.e., How likely is it that the target is sociable?), and competence (i.e., How likely is it that the target is competent?) on seven-point scales ranging from 1 (not at all) to 7 (extremely).

## Results and discussion

### Manipulation check

To check the effectiveness of the manipulation, the morality, sociability, and competence scores were submitted to a 2 (morality: high vs. low)  $\times$  2 (sociability: high vs. low)  $\times$  2 (competence: high vs. low) between-participants multivariate analysis of variance (MANOVA). The analysis revealed a significant multivariate main effect of morality  $F(3, 189) = 92.69, p = .001, \eta_p^2 = .59$ . At the univariate level, the main effect of morality was significant only for the morality scores  $F(1, 191) = 264.97, p = .001, \eta_p^2 = .58$ . Thus, participants rated the target as more moral in the high morality condition ( $M = 5.26, SD = 1.60$ ) than in the low morality condition ( $M = 2.02, SD = 1.18$ ). By contrast, participants perceived the target as competent in the high morality condition ( $M = 4.23, SD = 2.24$ ) as in the low morality condition ( $M = 4.05, SD = 2.34$ ),  $F < 1, p = .32$ . In a similar vein, the target was rated as sociable in the high morality condition ( $M = 4.07, SD = 2.25$ ) as in the low morality condition ( $M = 3.84, SD = 2.38$ ),  $F(1, 191) = 2.47, p = .12, \eta_p^2 = .01$ .

The analysis also yielded a multivariate main effect of competence,  $F(3, 189) = 158.46, p = .001, \eta_p^2 = .72$ . At the univariate level, the main effect of competence was significant only for the competence scores,  $F(1, 191) = 456.21, p = .001, \eta_p^2 = .70$ . Hence, participants rated the individual as more competent in the high competence condition ( $M = 6.05, SD = 1.23$ ) than in the low competence condition ( $M = 2.22, SD = 1.39$ ). Participants perceived the individual as moral in the high competence condition ( $M = 3.71, SD = 2.28$ ) as in the low competence condition ( $M = 3.53, SD = 2.01$ ),  $F < 1, p = .43$ . Furthermore, ratings of sociability did not differ between the high competence condition ( $M = 3.99, SD = 2.39$ ) and the low competence condition ( $M = 3.92, SD = 2.19$ ),  $F < 1, p = .64$ .

**Table 2** Mean ratings of schadenfreude as a function of morality, sociability, and competence manipulation (experiment 2)

	Low morality	High morality
<i>Low competence</i>		
Low sociability	.36 (.26)	.27 (.26)
High sociability	.28 (.24)	.24 (.22)
<i>High competence</i>		
Low sociability	.50 (.18)	.27 (.24)
High sociability	.38 (.26)	.27 (.27)

Standard deviations are provided in parentheses

Finally, the analysis revealed a multivariate main effect of sociability,  $F(3, 189) = 261.73, p = .001, \eta_p^2 = .81$ . At the univariate level, the main effect of sociability was significant only for the sociability scores,  $F(1, 191) = 673.24, p = .001, \eta_p^2 = .78$ . Specifically, participants rated the target as more sociable in the high sociability condition ( $M = 5.97, SD = 1.18$ ) than in the low sociability condition ( $M = 1.93, SD = .99$ ). In contrast, ratings of morality did not differ between the high sociability condition ( $M = 3.77, SD = 2.13$ ) and the low sociability condition ( $M = 3.50, SD = 2.14$ ),  $F(1, 191) = 1.85, p = .17, \eta_p^2 = .01$ . Furthermore, the target was rated as competent in the high sociability condition ( $M = 3.99, SD = 2.31$ ) as in the low sociability condition ( $M = 4.28, SD = 2.31$ ),  $F(1, 191) = 2.62, p = .11, \eta_p^2 = .01$ . In sum, our manipulation of morality, sociability, and competence was successful.

### Schadenfreude

Preliminary analyses revealed that schadenfreude, deservingness, dislike, and envy scores were not normally distributed (skewness  $> 1$ ). Thus, we used a logarithmic transformation to normalize the distribution of scores. Next, we submitted the schadenfreude scores to a 2 (morality: high vs. low)  $\times$  2 (sociability: high vs. low)  $\times$  2 (competence: high vs. low) ANOVA with all factors varying between participants (see Table 2). The analysis yielded a main effect of morality,  $F(1, 191) = 10.79, p = .001, \eta_p^2 = .05$ . Participants felt more schadenfreude in the immoral condition ( $M = .38, SD = .24$ ) than in the moral condition ( $M = .26, SD = .25$ ).<sup>1</sup> We also found a marginal main effect of competence,  $F(1, 191) = 3.77,$

<sup>1</sup> A follow up study ( $N = 50$ ) manipulated only moral information (high vs. low) and included a control condition (i.e., no information about the target person was provided unless the basic information provided in the previous studies: “An Italian guy who is 27 years-old”). It revealed that participants felt more schadenfreude in the immoral condition than in the moral condition and control condition,  $p = .001$ . By contrast, scores did not differ between the moral and

$p = .053$ ,  $\eta_p^2 = .02$ . Participants reported more schadenfreude in the competent condition ( $M = .35$ ,  $SD = .25$ ) than in the incompetent condition ( $M = .29$ ,  $SD = .25$ ). By contrast, the analysis did not yield neither a main effect of sociability [ $F(1, 191) = 2.64$ ,  $p = .11$ ,  $\eta_p^2 = .01$ ] nor any interaction effect (all  $ps > .16$ ). Importantly, the main effect of morality was stronger than the main effect of competence. According to Cohen’s (1977) conventional criteria, the effect size of morality was “medium” ( $d = .49$ ) whereas that of competence was “small” ( $d = .24$ ). These findings support our hypothesis that morality has a primary role in predicting schadenfreude.

**Deservingness**

Next, we submitted the deservingness scores to a 2 (morality: high vs. low)  $\times$  2 (sociability: high vs. low)  $\times$  2 (competence: high vs. low) ANOVA with all the factors varying between participants (see Table 3). The analysis revealed the expected main effect of morality,  $F(1, 191) = 21.45$ ,  $p = .001$ ,  $\eta_p^2 = .010$ . Participants reported higher levels of deservingness in the immoral condition ( $M = .34$ ,  $SD = .27$ ) than in the moral condition ( $M = .17$ ,  $SD = .22$ )<sup>2</sup>.

**Dislike**

Next, we submitted the dislike scores to a 2 (morality: high vs. low)  $\times$  2 (sociability: high vs. low)  $\times$  2 (competence: high vs. low) ANOVA with all the factors varying between participants (Table 4). The analysis revealed only a main effect of morality,  $F(1, 186) = 20.62$ ,  $p = .001$ ,  $\eta_p^2 = .10$ . Participants reported higher levels of dislike in the immoral condition ( $M = .32$ ,  $SD = .29$ ) than in the moral condition ( $M = .15$ ,  $SD = .23$ ). By contrast, the analysis did not yield neither a main effect of competence [ $F < 1$ ,  $p = .77$ ] nor of sociability [ $F(1, 186) = 2.64$ ,  $p = .11$ ,  $\eta_p^2 = .01$ ], nor any interaction effect (all  $ps > .23$ ).

**Envy**

Next, we submitted the envy scores to a 2 (morality: high vs. low)  $\times$  2 (sociability: high vs. low)  $\times$  2 (competence:

Footnote 1 continued control condition,  $p = .72$ . Together, these findings confirmed the key role of negative moral information in driving schadenfreude.

<sup>2</sup> The analysis also revealed an unexpected two-way interaction between sociability and competence,  $F(1, 191) = 6.51$ ,  $p = .01$ ,  $\eta_p^2 = .03$ . Participants reported higher levels of deservingness when the target was depicted as highly competent and highly sociable than when the target was depicted as highly sociable but lacking competence. Despite this interaction, deservingness scores did not play any mediational role neither when competence, nor when sociability were taken into account as independent variables.

**Table 3** Mean ratings of deservingness as a function of morality, sociability, and competence manipulation (experiment 2)

	Low morality	High morality
<i>Low competence</i>		
Low sociability	.35 (.31)	.21 (.24)
High sociability	.22 (.22)	.14 (.19)
<i>High competence</i>		
Low sociability	.34 (.24)	.13 (.20)
High sociability	.42 (.28)	.21 (.24)

Standard deviations are provided in parentheses

**Table 4** Mean ratings of dislike as a function of morality, sociability, and competence manipulation (experiment 2)

	Low morality	High morality
<i>Low competence</i>		
Low sociability	.32 (.31)	.22 (.27)
High sociability	.27 (.29)	.12 (.21)
<i>High competence</i>		
Low sociability	.37 (.29)	.16 (.23)
High sociability	.33 (.29)	.11 (.19)

Standard deviations are provided in parentheses

high vs. low) ANOVA with all the factors varying between participants. The analysis did not yield any significant result (all  $ps > .09$ ).

**Mediational models**

Finally, we tested our mediational model (see Table 5 for the correlation between variables). We found that the manipulation of morality predicted schadenfreude ( $B = -.11$ ,  $SE = .04$ ,  $p = .002$ ). Moreover, the manipulation of morality predicted the deservingness scores ( $B = -.16$ ,  $SE = .04$ ,  $p = .001$ ). When deservingness scores were included in the regression equation, they predicted schadenfreude ( $B = .59$ ,  $SE = .06$ ,  $p = .001$ ), whereas the direct effect of the morality manipulation became no longer significant ( $B = -.02$ ,  $SE = .03$ ,  $p = .59$ ). This supported the idea that deserving misfortune mediated the relationship between the morality manipulation and schadenfreude ( $B = -.09$ ,  $SE = .02$ , 95 % CI =  $[-.14, -.05]$ ). By contrast, the model was not significant when we considered the manipulation of competence ( $B = .02$ ,  $SE = .02$ , 95 % CI =  $[-.01, .06]$ ) and sociability ( $B = -.01$ ,  $SE = .02$ , 95 % CI =  $[-.04, .03]$ ) as independent variables. We further tested an additional mediational model considering dislike and deservingness as two potential mediators in series. We found that the manipulation of morality predicted dislike scores

**Table 5** Correlation between variables (experiment 2)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Morality manip.			1						
2. Sociability manip.			-.02	1					
3. Competence manip.			-.01	.09	1				
4. Envy	.12	.21	.05	.02	.12	1			
5. Dislike	.23	.27	-.30**	-.11	.01	.41**	1		
6. Deservingness	.24	.25	-.31**	-.02	.08	.16*	.43**	1	
7. Schadenfreude	.31	.25	-.22**	-.08	.12	.14*	.43**	.61**	1

\*\*  $p < .01$ \*  $p < .05$ 

( $B = -.16$ ,  $SE = .04$ ,  $p = .001$ ), which in turn predicted the deservingness scores ( $B = .34$ ,  $SE = .06$ ,  $p = .001$ ), which in turn predicted schadenfreude ( $B = .50$ ,  $SE = .06$ ,  $p = .001$ ). When the mediators were included in the regression equation, the direct effect of the morality manipulation became no longer significant ( $B = -.001$ ,  $SE = .03$ ,  $p = .96$ ). The analysis revealed that the indirect effect via the mediators was significant ( $B = -.02$ ,  $SE = .01$ , 95 % CI =  $[-.05, -.01]$ ) and that dislike and deservingness mediated the relationship between our manipulation and the subsequent reported schadenfreude. Moreover, the model was not significant when we considered the manipulation of competence ( $B = .01$ ,  $SE = .01$ , 95 % CI =  $[-.02, .02]$ ) and sociability ( $B = -.01$ ,  $SE = .01$ , 95 % CI =  $[-.03, .01]$ ) as independent variables. In line with experiment 1, envy did not mediate the effects we found, and the mediational models remained significant even treating envy as a covariate. Thus, experiment 2 showed that the more a target is perceived as immoral, the more his failures cause pleasure to an observer. In line with previous studies, it also showed that the more a target is perceived as competent, the more his failures are pleasing. However, moral information ascribed to an individual target had a stronger impact on schadenfreude than competence information. Moreover, experiment 2 shows that perception of dislike and deservingness uniquely account for the role of morality in driving schadenfreude.

## General discussion

Two studies provided consistent support for our hypothesis that morality trumps sociability and competence in driving pleasure at others' misfortunes. Experiment 1 found individuals feel more joy when misfortune occurred to a competent but immoral individual than to an equally competent but unsociable person. As predicted, we further found that such an effect was driven by the perception that

the misfortune occurred to an immoral individual was deserved. Experiment 2 further corroborated these findings by showing that morality trumps not only sociability, but also competence, in driving schadenfreude.

## Strengths and implications

Together, these findings add new evidence to the growing literature on schadenfreude. Previous studies have shown that people feel joy when misfortune occurs to social targets perceived as highly competent but lacking warmth. However, these prior works failed to differentiate between the sociability and morality components of warmth and did not test the relative importance of these characteristics in driving schadenfreude. Extending these findings, we show the key role of moral characteristics in driving joy at others' failure. Thus, we show that the failure to differentiate the various ways in which people can be judged to be warm obscures the important role played by morality in driving joy at others' setbacks.

Our data further complemented prior research evidence showing that competence is a key factor driving schadenfreude. Indeed, it has been shown that misfortune occurring to highly competent targets elicit more schadenfreude than misfortune occurring to targets lacking ability and intelligence (Cikara and Fiske 2012, 2013; Van Dijk et al. 2005; see also Smith 2013; Van Dijk and Ouwerkerk 2014). Our findings confirmed these prior insights, but further revealed the primary role of morality in driving schadenfreude. Indeed, the feeling of schadenfreude was more strongly affected by the manipulation of moral qualities than competence qualities ascribed to an individual person. Importantly, the target information we used was carefully selected to convey equal favorability. Thus, the leading role of morality information in shaping the malicious pleasure was not driven by its greater favorability.

In a similar vein, our findings complement and extend prior work by Feather on deservingness and the structure of action/outcome relations (Feather 1999). Research on this

tradition has suggested that moral individuals tend to be perceived as less likely to initiate the negative event that leads to the setback, and in that sense less responsible for the event and less deserving the misfortune when compared with a person lacking moral character (Feather and Atchison 1998; Feather and Deverson 2000). However, such prior work did not test whether individuals perceive the misfortune occurred to an immoral target as more deserved than the misfortune occurred to social targets lacking other human characteristics. Moreover, such prior works did not address whether the feeling of deservingness might account for the effects of the trait-content information about a social target on the feeling of *schadenfreude* at his/her misfortune. Building on such prior work, we showed that that moral character and the perception of deserving the misfortune are inherently linked and that morality has an exclusive and distinctive role that goes over and beyond other human characteristics.

Moreover, extending prior insights on the determinant of *schadenfreude* in general, we found that two predictors identified by prior research might interact with each other in eliciting such a malicious joy. Combining prior research on the target characteristics in leading pleasure at his/her misfortune (Cikara and Fiske 2012, 2013) with that showing that deservingness is the strongest predictor of *schadenfreude* (Feather and Sherman 2002; Van Dijk et al. 2005), we show that these two factors might interact to each other. Indeed, we found that the key role of morality in driving *schadenfreude* is accounted by the perception that the misfortune occurred to an immoral individual is deserved.

The current findings go hand in hand with prior evidence investigating the relationship between *schadenfreude*, deservingness and negative emotions. Indeed, some studies have revealed that deservingness predicts *schadenfreude* when dislike is salient (Feather and Sherman 2002; Feather, et al. 2013; Hareli and Weiner 2002). By showing that morality directly affected dislike feelings in experiment 2 and that dislike and deservingness mediated the effect of morality on *schadenfreude*, our data confirmed and extended such prior insights. Indeed, extending such prior insights, we show that immorality may be a factor that triggers the causal chain of dislike, deservingness, and *schadenfreude*.

As they stand, our findings extend prior evidence on the debate concerning the basic dimensions underlying social cognition. In particular, our data complements recent work showing that morality and sociability represent two distinct characteristics in predicting impressions (Brambilla and Leach 2014; Goodwin et al. 2014; Leach et al. 2007; see also Ellemers 2012). By showing that moral information

has a leading role over sociability trait-characteristics in predicting *schadenfreude*, we show that sociability and morality are distinct characteristics, not only in predicting impressions, but also in predicting specific emotional reactions. Thus, examinations of social cognition and its emotional routes may be better served by attending to the more specific ways in which people judge others' warmth and competence.

The current findings go hand in hand with recent research investigating the several features of the social target that can influence people's empathy for others' pain. Riva et al. (2016) found that people ascribe lower capacity to experience pain following socially stressful events (e.g., the death of a loved one) to those who lack moral qualities compared with those who are highly moral. Our findings complement this recent line of research. Indeed, observers attribute less capacity to suffer to social targets they perceive as lacking moral qualities and—at the same time—enjoy more their misfortunes. Based on this evidence, we argue that social actors should aim at conveying their moral qualities. In this way, perceivers will likely have higher empathy and experience less *schadenfreude* for their pain. In a similar way, a possible strategy that could be implemented to decrease the likelihood that perpetrators engage in acts of denigrations of social targets is to increase the saliency of these targets' moral qualities. Our research suggests that the best antidote to lack of empathy and the experience of *schadenfreude* might be the perception that someone is a moral person.

### Limitations and directions for future research

There are some limitations to the present research. First, considering that envy is a key predictor of *schadenfreude* (Smith et al. 1996; Van Dijk et al. 2006) elicited by targets highly competent but lacking human warmth (Fiske et al. 2007), we included a single item measure of envy in our studies. However, our data suggested that envy did not play any role in driving the effects we found. By contrast, the perception of deserving misfortune explained the direction of influence from (im)morality to *schadenfreude*. Thus, while envy does play a role in driving *schadenfreude* when the two general dimensions of warmth and competence are considered (Cikara and Fiske 2012), envy seems to be less important when the two evaluative components of warmth (i.e., sociability and morality) are taken into account. Thus, we further showed that the distinction between sociability and morality within the broader dimension of warmth is not trivial, as these dimensions drive different emotions. Nevertheless, our results should be taken with caution considering that we used a single item to measure envy.

Our strategy was in line with Cikara and Fiske (2012) that used a general measure of envy (see also Feather and Sherman 2002; Feather et al. 2013; Hareli and Weiner 2002). However, considering research showing that envy has two distinct components (i.e., benign and malicious envy) and that the malicious component is more related to schadenfreude than the benign one (van de Ven et al. 2015), an interesting avenue for future research would be to test how morality, sociability, and competence characteristics relate to these facets of envy by employing a multi-item measure of envy.

Second, in our studies, before presenting the misfortune event, we provided a male target picture supplied with some information about his characteristics. This methodology is comparable to that used by Cikara and Fiske (2012). However, whereas Cikara and Fiske (2012) focused on intergroup perception by considering stereotype content in eliciting schadenfreude, we focused on interpersonal perception by considering the personality characteristics of a male stranger. Thus, extending prior research our data show that not only stereotype content of known group, but also information of personality characteristics of a stranger is sufficient to elicit schadenfreude. It should be noted, however, that while Cikara and Fiske (2012) used facial electromyography to measure schadenfreude, we employed self-report scales that are more susceptible to be influenced by demand characteristics. This might explain why in our studies schadenfreude means were low (for similar findings, see Leach et al. 2003; Van Dijk et al. 2005; Van Dijk and Ouwerkerk 2014). Future research should test the prediction that morality trumps sociability and competence in driving schadenfreude by considering physiological measures (e.g., facial electromyography) of schadenfreude.

Finally, it should be noted that we used hypothetical scenarios or an allegedly real situation involving a male stranger. Although these methodologies are commonly used by research on schadenfreude (Smith et al. 2009; Takahashi et al. 2009; van de Ven et al. 2015; Van Dijk et al. 2011a) we realize that these paradigms prevent participants to actually experience schadenfreude. Thus, an important challenge for future research would be to test the factors promoting the insurgence of schadenfreude by considering more naturalistic settings.

#### Compliance with ethical standards

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

**Ethical approval** The studies reported in this paper have been approved by the Ethics Committee at the University of Milano-Bicocca, and informed consent was obtained from all participants. All procedures were in accordance with the ethical standards of the institutional and national research committee and with the 1964

Helsinki declaration and its later amendments or comparable ethical standards.

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